Trieste, 4-10 September 2016

35TH GENERAL ASSEMBLY OF THE EUROPEAN SEISMOLOGICAL COMMISSION

www.35esc2016.eu
La tierra firme tiembla y es abismo
es como si nos traicionara el día.
Es como si el agua mintiera y dos y dos fueran cien y nuestra madre
nos odiara y nuestra mano se levantara contra nosotros.
Dios nos ha dado tantas cosas:
manzanas, días, despedidas, maderas y la esperanza, la otra cara del miedo.
Ahora nos toca el más secreto y el más precioso de los dones:
el fin.

Jorge Luis Borges

At the time we are about to print this Conference Program we receive the
deadly news of Central Italy earthquake of August 24, UTC 1:36.
Our deepest grief goes to all the people hit by this last devastating
earthquake sequence. The poem, written by Jorge Luis Borges 40 years
ago for the Friuli earthquake, is today alive again.
We dedicate it to the countless victims.

Picture on Monte Vettore (Monti Sibillini), courtesy of R. Azzaro
WELCOME MESSAGE

Dear Participants,

On behalf of the Local Organizing Committee, I take great pleasure in welcoming you to Trieste for the 35th General Assembly of the European Seismological Commission. Although never hit by strong earthquakes, Trieste has a long history in seismology, begun at the beginning of the 20th century, improved with the installation of the instruments of the World Wide Standardized Seismographic Network in the 1960s, and perfected after the strong earthquake that hit the Friuli region in 1976. I hope that hosting the 35th General Assembly of the European Seismological Commission here in Friuli Venezia Giulia on the anniversary of that sad event will be a way to further improve cooperation among scientists in the framework of a long-lasting policy of seismic-risk reduction.

We have received 615 abstracts from corresponding authors of 50 different countries, for a total of 349 oral and 266 poster presentations. In addition, we will offer 6 key lectures by expert researchers, mostly from Europe. All of these presentations will surely contribute to a better understanding of the earthquake process.

I am grateful to all those who helped organize this conference and to all participants. I wish you a pleasant stay in Trieste.

Marco Mucciarelli
Chairman of the Local Organizing Committee
Dear Participants of the 35th General Assembly of the European Seismological Commission,

I feel honored to welcome you to our bi-annual assembly here in Trieste. Despite the long-standing historical background of this city, we also acknowledge the disastrous earthquakes that hit Friuli in 1976, forty years ago. Since then, we have witnessed several earthquake catastrophes of unbelievable proportions such as those in Sumatra or Haiti, not to mention the Sendai/Tohoku earthquake, which drastically revealed the limitations of the technologies at our disposal. As the world’s population increases in the coming decades, the seismic risk becomes an even more serious threat to our society.

Today, time is of the essence here. Early warning systems have been deployed in many areas. Although they cannot prevent these catastrophes from occurring, they do mitigate the effects. Smartphone technologies have replaced conventional community information services (radio, TV) to a large extent. Nevertheless, there is much more to seismology than quick and hasty releases to the media, as we all know, such as studies of the interior of our planet or induced seismicity. New venues and methods for estimating the degree of seismic hazard are constantly being investigated, and state of the art building codes are being developed. Seismologists must adopt these technological developments and new strategies in terms of educational outreach and citizen science, the latter being a topic, which has been applied for more than 100 years in macroseismology.

We have gathered here to exchange ideas and to optimize our efforts in creating a safer world. This would not have been possible without the hard work of our predecessors.

Hence, I would like to thank the presidents of the past ten years - Claudio Eva, Domenico Giardini, Jochen Zschau, Steinunn Jakobsdóttir and Alexey Zavyalov - and especially the former General Secretary Mariano Garcia Fernandez, who was assisted many years by Ina Cecic in her capacity as Assistant Secretary, for their input and the work done for the benefit of European seismology and our society.

**Wolfgang Lenhardt**
President of ESC
Dear Participants,

It is my great pleasure to welcome you here in Trieste for the 35th General Assembly of the European Seismological Commission. Trieste is a multicultural city with a strong scientific vocation. It has a world renowned reputation for hosting more than 30 research institutions located on its territory: universities, institutions and laboratories that carry out cutting-edge research in the most diverse scientific fields with solid international collaborations fostering at the same time a strong entrepreneurial spirit.

Thus, it represents a hub of international excellence at the heart of the enlarged Europe and a joining link between Eastern and Western culture. Our city has already hosted the General Assembly of the European Seismological Commission back in 1974 and I am pleased that the Commission, this year, has chosen to visit us again for this important meeting.

Moreover it’s important to point out that 2016 represent a significant date since it’s the fortieth anniversary of the series of big earthquakes that hit our Region in 1976. After those devastating events the Regional Government entrusted to the Department of Seismological Research (CRS) of OGS the seismological monitoring of the entire Region.

The roots of the National Institute of Oceanography and Applied Geophysics – OGS, an internationally oriented public research institution, date back to the Austro-Hungarian Empire to the second half of the 18th century. Since the set up of the first seismograph of the area, CRS manages the long-lasting Trieste seismographs (WWSSN from 1963 to 1992) and the NE Italy seismometric network, operating since 1977 and, thanks to the strategic location in Trieste, later part of NATO within the Soviet bloc.

Finally, I would like to thank Marco Mucciarelli and all the researchers from OGS involved in the scientific and the local organizing committees for their great effort in supporting the ESC and coordinating the overall organization of Assembly.

I am confident that the 35th General Assembly of the European Seismological Commission will be a platform to stimulate relationships and grow collaborations and I hope you will benefit from the scientific programme and new ideas presented during lectures and sessions.

Welcome to Trieste!

Maria Cristina Pedicchio
President of OGS
SCIENTIFIC COMMITTEE

Chair
Marco Mucciarelli

Members
Paolo Comelli
Mariano Garcia-Fernandez
Päivi Mäntyniemi
Stefano Parolai
Damiano Pesaresi
Dario Slejko
Peter Suhadolc

LOCAL ORGANIZING COMMITTEE

Chair
Marco Mucciarelli

Members
Abdelkrim Aoudia
Antonella Barbieri
Paolo Bernardi
Paolo Comelli
Stefano Francese
Paolo Giurco
Maurizio Grossi
Giorgio Padoan
Damiano Pesaresi
Francesca Petrera
Cristian Ponton
Alessandro Rebez
Dario Slejko
Peter Suhaldoc
William Toson
REGISTRATION AND INFORMATION DESK

The registration and information desks are located in the main hall.

Sunday, 4 September  from 15.00 to 18.30
Monday, 5 September  from 08.00 to 18.30
Tuesday, 6 September  from 08.00 to 18.30
Wednesday, 7 September  from 08.00 to 18.30
Thursday, 8 September  from 08.00 to 18.30
Friday, 9 September  from 08.00 to 15.00

BADGE COLOR CATEGORY

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<tr>
<th>WHITE</th>
<th>Partecipant</th>
<th>RED</th>
<th>Exhibitor</th>
<th>BLUE</th>
<th>LOC</th>
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<tr>
<td>GREEN</td>
<td>Guest</td>
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<td>Accompanying person</td>
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SLIDE PREVIEW POINT The oral presentations are organized centrally. Therefore the authors are kindly asked to upload their presentations at the presentation upload desk, next to the registration desk, at last two hours prior to their presentation. Then our technical staff will take care of uploading the material to the respective lecture room. A lecture room assistant will be available for any help. It is not allowed to use personal laptops for presentations. Since standard oral presentation are only 12 minutes, authors are recommended not to have more than 15 slides in their presentations.

TIME ALLOWANCE FOR PRESENTATION The time allocated for each presentation is 12 minutes. Careful time keeping is important for the smooth running of the session. Please make sure not to overrun your allocated time.

POSTER REQUIREMENTS All posters will be displayed during the day(s) of the pertinent section. At the end of pertinent section, authors should remove their posters, otherwise they will be removed by the conference personnel and may not be recoverable. Posters should be 90 cm-120 cm in portrait configuration.

EXIBITION VENUE

WORKING HOURS

| Monday, 5 September   | from 8.30 to 18.30 |
| Tuesday, 6 September  | from 8.30 to 18.30 |
| Wednesday, 7 September| from 8.30 to 18.30 |
| Thursday, 8 September | from 8.30 to 18.30 |
| Friday, 9 September   | from 8.30 to 16.30 |

INTERNET Free Wi-Fi is available at the conference venue.

CERTIFICATES OF ATTENDANCE Certificates of Attendance will be given upon request to the Registration Desk.
# Social Program

## Pre Conference Tour

**Sunday, 4 September**

Grotta Gigante (Trieste, I), Zagreb (HR)

## Ice Breaker

**Sunday, 4 September**

from **18.30** to **21.00**

Hall Congress Center

## Social Dinner

**Wednesday, 7 September**

from **19.30** to **22.30**

Dock 42

## Post Conference Tour

**Saturday and Sunday, 10-11 September**

Breginj (SLO), Bled (SLO), Venzone (I), Gemona (I)

## Accompanying Person Program*

**Afternoon visit of Trieste and San Giusto, Monday September 5 - € 33.00 per person**

Meeting of the group with English-speaking escort at 2:15 pm by the Maritime Station. Departure of the group at 2:30 on foot towards San Giusto Castle. Estimated return time about 5:30 pm in front of the Maritime Station.

**Afternoon visit to Grotta Gigante, Tuesday September 6 - € 39.00 per person**

Meeting of the group with English-speaking escort at 2:45 pm by the Maritime Station. Departure by private bus/van from the Maritime Station at 3:00 pm. The Grotta Gigante is a karstic cave, first explored in 1840 and opened for tourists in 1908 by the Trieste Tourist Club. Estimated return time about 5:30 pm in front of the Maritime Station.

**Afternoon visit to Miramare Castle and Park, Wednesday September 7 - € 33.00 per person**

Meeting of the group with English-speaking escort at 2:15 pm by the Maritime Station. Departure by private bus/van from the Maritime Station at 2:30 pm. The beautiful **Castle of Miramare** was built in white stone on a rocky promontory overlooking the sea between 1856 and 1860, as the love nest for Archduke Maximilian of Austria and Charlotte of Belgium. Estimated return time around 5.30 pm in front of the Maritime Station.

**Afternoon tour by motor vessel to Muggia and visit of the little town, Thursday September 8, € 35.00 per person.**

Meeting of the group with English-speaking escort at 2:45 pm by the Maritime Station. Departure by the **Delfino Verde** motor vessel from the Bersaglieri pier in Trieste at 3:10 pm, arrival in Muggia at 3:40 pm. Muggia is a small municipality in the vicinity of Trieste, a real gem with a Venetian flavour, backed by beautiful hills rising just behind it. At 6:05 pm the group shall return to Trieste by motor vessel, and arrive at 6:35 right in front of Piazza Unità d’Italia.

*The visits can be booked at the reception desk (main hall of the Congress Center) at the info point of the Smile&GO travel agency, every morning before the end of the poster session.*

*Open also to the Conference participants, upon onsite registration*
Stazione Marittima / Trieste

Hall

ESC 2016 Conference
35th General Assembly of the European Seismological Commission

1 - TRIMBLE
2 - NANOMETRICS
3 - KINEMETRICS
4 - GURALP
5 - SSA
6 - CODEVINTEC ITALIANA
7 - SPRINGER
8 - EAEE
9 - OGS
10 - OGS
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<td>15:00 - 18:00</td>
<td>REGISTRATION</td>
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<td><strong>MONDAY 5 SEPTEMBER 2016</strong></td>
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<td>REGISTRATION</td>
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<td>Saturnia Auditorium: OPENING CEREMONY</td>
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<tr>
<td>09:30 - 10:30</td>
<td>Saturnia Auditorium: Keynote Lecture - Dario Albarello: Extensive application of seismic microzoning: methodological and socio-political issues in the Italian Experience</td>
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<td>10:30 - 11:30</td>
<td>POSTER SESSION &amp; COFFEE BREAK</td>
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<td>Room Oceania A+B</td>
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<td>From school and citizen seismology to geotechnics</td>
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<td>Earthquakes in regions of slow lithospheric deformation</td>
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<td>Seismic sources: theory, methods and applications</td>
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<td>Operational earthquake forecasting: prediction: advances in models, observations and verification</td>
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<td>Methods and data for the study of earthquakes recorded on pre-WWSSN historical seismograms</td>
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<td>18:00 - 20:00</td>
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**TUESDAY 6 SEPTEMBER 2016**

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<tr>
<td>09:00-10:30</td>
<td><strong>Saturnia Auditorium: Prof. N.N. Ambraseys Distinguished Award Lecture</strong></td>
<td>Room Saturnia</td>
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<td>10:30 - 11:30</td>
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<tr>
<td>Eastern Alpine seismological investigation: State of the art of the Alpine system from the Dinaric Arc to the Adriatic Sea</td>
<td>Room Oceania 2</td>
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<tr>
<td>Seismic sources: theory, methods and applications</td>
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<tr>
<td>Operational earthquake forecasting/prediction advances in models, observations and verification</td>
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<td>Induced and triggered seismicity: mechanisms, monitoring, discrimination and management strategies</td>
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<td>40th anniversary of 1976 Friuli earthquakes – Lessons learned</td>
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<tr>
<td>From active faulting and geodynamic data to the assessment of seismic hazard: new constraints and challenges ahead</td>
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**WEDNESDAY 7 SEPTEMBER 2016**

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<tr>
<td>09:00-10:30</td>
<td><strong>Saturnia Auditorium: Inge Lehmann Distinguished Award Lecture</strong></td>
<td>Room Saturnia</td>
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<tr>
<td>10:30 - 11:30</td>
<td><strong>POSTER SESSION &amp; COFFEE BREAK</strong></td>
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<td><strong>ORAL SESSIONS</strong></td>
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<td>Advances in noninvasive approaches to characterizing seismic site conditions (Joint ESC/EAEE session)</td>
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<td>Room Saturnia</td>
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<td>13:30-14:30</td>
<td>LUNCH BREAK</td>
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<td>14:30-17:30</td>
<td><strong>ORAL SESSIONS</strong></td>
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<tr>
<td>Earthquake seismology applied: what's needed for managing the many facets of risk</td>
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<td>17:30-18:30</td>
<td><strong>POSTER SESSION &amp; COFFEE BREAK</strong></td>
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<td>19:30-22:30</td>
<td><strong>GALA DINNER</strong></td>
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### Thursday 8 September 2016

**Saturnia Auditorium: Keynote Lecture - WILLIAM L. ELLSWORTH: Managing the Hazard of Induced Earthquakes in a Changing World**

**ENRICO PROLO: Natural, triggered, or induced? An Italian/European perspective on the theme of monitoring and discrimination of induced seismicity**

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<thead>
<tr>
<th>Time</th>
<th>Session 02</th>
<th>Session 07</th>
<th>Session 12</th>
<th>Session 18</th>
<th>Session 24</th>
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<tr>
<td>11:30-13:30</td>
<td>Room Oceania C</td>
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<tr>
<td><strong>ORAL SESSIONS</strong></td>
<td>From ORFEUS to EPOS: the development of European seismological research infrastructures – attribute to Torkil van Eck</td>
<td>Rapid estimation of secondary earthquake effects and their impacts</td>
<td>Operational assessment and management of natural and induced seismic risk</td>
<td>Seismological and structural studies in Polar Regions and the cryosphere</td>
<td>FAULT2SHA – a European working group to link faults and probabilistic seismic hazard assessment communities in Europe</td>
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<td>13:30-14:30</td>
<td><strong>LUNCH BREAK</strong></td>
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<td><strong>ORAL SESSIONS</strong></td>
<td>From ORFEUS to EPOS: the development of European seismological research infrastructures – attribute to Torkil van Eck</td>
<td>Advances in borehole networks, data, and analysis</td>
<td>Earthquake and multi-hazard early warning and rapid response</td>
<td>Seismological and structural studies in Polar Regions and the cryosphere</td>
<td>FAULT2SHA – a European working group to link faults and probabilistic seismic hazard assessment communities in Europe</td>
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### Friday 9 September 2016

**Saturnia Auditorium: Keynote Lecture - ABDELKRIM AOUIDA: from Adria to Idris: Lithospheric deformation and interseismic strain accumulation**

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<tr>
<td><strong>ORAL SESSIONS</strong></td>
<td>Educational seismology: empowering the community for seismic risk reduction</td>
<td>Improving seismic networks performance from site selection to data integration</td>
<td>Deformation and seismicity of the Western Hellenic Arc – Ionian Sea Plate boundary – insights into the 2015 Lefkada M6.5 earthquake</td>
<td>FAULT2SHA – a European working group to link faults and probabilistic seismic hazard assessment communities in Europe</td>
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**Saturnia Auditorium: CLOSING PLENARY**

### General Assembly of the European Seismological Commission

- **18:00-20:00** EPOS Seismology Open Meeting - Room Saturnia
- **18:00-20:00** ESC Council Meeting - Room Vulcania 2
- **13:30-15:30** CEED Meeting - Room Marconi
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<th>Time</th>
<th>Session</th>
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<td>08:00–09:30</td>
<td>SE2 Opening Plenary &amp; Opening Ceremony</td>
<td>Lecture Room: Saturnia</td>
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<td>09:30–10:30</td>
<td>Keynote Lecture</td>
<td>Lecture Room: Saturnia</td>
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<td>Chairperson: Mariano Garcia-Fernandez</td>
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<td></td>
<td>DARIO ALBARELLO: Extensive application of seismic microzoning: methodological and socio-political issues in the Italian experience</td>
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<td>11:30–12:30</td>
<td>04 From school and citizen seismology to geoethics</td>
<td>Conveners: Rémy Bossu; Paul Denton; Paul Earle; Giuseppe Di Capua</td>
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<td>Lecture Room: Oceania C</td>
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<td>11:30–11:45: ESC2016-120</td>
<td>4 years of seismology in school activities in Romania</td>
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<td>Tataru, Dragos; Zaharia, Bogdan; Grecu, Bogdan</td>
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<td>11:45–12:00: ESC2016-131</td>
<td>LastQuake: an app for massive real time crowdsourcing and seismic risk reduction</td>
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<td>Bossu, Rémy; Steed, Robert; Frédéric, Roussel; Gilles, Mazet-Roux</td>
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<td>12:00–12:15: ESC2016-501</td>
<td>Rapid estimation of earthquake intensity from Twitter’s social sensors</td>
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<td>Meletti, Carlo; Cresci, Stefano; Tesconi, Maurizio</td>
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<td>12:15–12:30: ESC2016-626</td>
<td>The SSE-EU programme for Educational Seismology</td>
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<td>Chouliaras, Gerasimos; Cavas, Bulent; Cerri, Luigi; Di Martino, Flora; Drakatos, George; Ivanov, Philip; Kouzov, Orlin; Makropoulos, Konstantinos; Mavromanolakis, Georgios; Papaevripidou, Marios; Pavlou, Yvoni; Pavlova, Daniela; Potsidi, Mariana; Sotiriou, Sofoklis; Zacharia, Zacharias</td>
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<td>11:30–13:00</td>
<td>06 Earthquakes in regions of slow lithospheric deformation</td>
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<td>Conveners: Susana Custódio; João Fonseca; Pierre Arroucau</td>
<td>Lecture Room: Vulcania 2</td>
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<td>Chairpersons: Susana Custódio, João Fonseca</td>
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<td>11:30–11:45: ESC2016-416</td>
<td>Coda Q Determination Across Western Canada: From a Region of Active Subduction, through a Volcanic Belt, to the Stable Craton</td>
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<td>Cassidy, John; Farahbod, Amir</td>
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<td>11:45–12:00: ESC2016-611</td>
<td>Challenge in identifying and characterizing active faults in low deformation area. Example near the capital of Mongolia.</td>
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<td>Bossu, Rémy; Schlupp, Antoine; Ferry, Matthieu; Munkhuu, Ulziibat; Granet, Michel</td>
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<td>12:00–12:15: ESC2016-364</td>
<td>Mozambique earthquakes: intraplate seismicity at the tip of the East African Rift System</td>
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<td>Fonseca, João; Domingues, Ana; Attanayake, Januka</td>
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<td>12:15–12:30: ESC2016-551</td>
<td>New estimates of seismicity rates in ireland</td>
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<td>Arroucau, Pierre; Lebedev, Sergei; Grannell, James; Mölhoff, Martin; Bean, Chris; Horan, Clare; Blake, Tom</td>
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<td>12:30–12:45: ESC2016-404</td>
<td>Long-term variations of the cGNSS data in the slow deforming N-Adria plate edge and relation with fault induced fluid mobilization.</td>
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<td>Rossi, Giuliana; Zuliani, David; Fabris, Paolo</td>
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<td>12:45–13:00: Discussion</td>
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<td>14:30–17:15</td>
<td>06 Earthquakes in regions of slow lithospheric deformation</td>
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<td>Chairpersons: Pierre Arroucau, João Fonseca</td>
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<td>14:30–14:45: ESC2016-362</td>
<td>The SEICHE Project: intraplate seismic source characterization for hazard assessment</td>
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<td>Fonseca, João; Vilanova, Susana; Catalan, Carolina; Domingues, Ana; Custódio, Susana; Foroutan, Mohammad</td>
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<td>14:45–15:00: ESC2016-565</td>
<td>Imaging active faults in the diffuse plate boundary between Iberia and North Africa</td>
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<td>Custódio, Susana; Arroucau, Pierre; Cesca, Simone</td>
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<td>15:00–15:15: ESC2016-396</td>
<td>Relationship between localized seismicity and lithospheric structure in a region of slow deformation (Alentejo, Portugal)</td>
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<td>Matos, Catarina; Heimann, Sebastian; Cesca, Simone; Silveira, Graça; Custódio, Susana</td>
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15:15–15:30: ESC2016-489
New evidence for large earthquakes in mainland Portugal: paleoseismology of the Lower Tagus Valley fault
Chami, Adel; Abdelkarim, Vihanova, Susana; Heleno, Sandra; Pinto, Luis; Sajedi Far, Ailaa; Falcão-Flor, Ana; Canora, Carolina; Pina, Pedro; Vieira, Gonçalo; Fonseca, João

15:30–15:45: ESC2016-223
Characterizing the seismic potential of a slow moving fault by integrating different techniques: the Alhama de Murcia fault (southeastern Betics, Spain)
Ferrater, Marta; Ortuño, Maria; Pallàs, Raimon; Perea, Hector; Baize, Stephane; Garcia-Melendez, Eduardo; Martinez-Diaz, Jose J.; Echeverria, Anna; Khazaradze, Giorgi; Rockwell, Thomas; Sharp, Warren D.; Arrowsmith, Alicia; Rhodes, Edward; Masana, Eulàlia

15:45–16:00: ESC2016-509
The Algiers earthquake of 1st August 2014 and its aftershocks sequence
Kariche, Jugurtha; Meghraoui, Mustapha; Timoulay, Youssef; Cetin, Esra; Toussaint, Renaud

16:00–16:15: ESC2016-14
The Alboran Sea earthquake (Mw 6.3) of 25 January 2016: A consequence of the 1994-2004 Al Hoceima seismic events?
Khelif, Mohamed Fadhlallah; Eshel, Chaouch; Abdellah; Haned, Abera; Benaissa, Zahia; Chami, Adel; Larbes, Yahia

16:15–16:30: ESC2016-552
Tectonic stress regime, crustal deformation and present-day seismicity of Egypt and surrounding area based on inversion of focal mechanism solutions for local earthquakes recorded by ENSN network
Abd el-aal, Abd el-aziz

16:30–16:45: ESC2016-262
Seismogenic nodes defined in north-east Egypt by the pattern recognition approach
Gorskov, Alexander; Hassan, Hany; Novikova, Olga

16:45–17:00: ESC2016-8
Lateral variations of the Poisson’s ratio in the Southern Anatolia lithosphere deformation
Aydin, Ufuk

17:00–17:15: Discussion

END OF ORAL PROGRAM 06

11:30–13:00

07 Seismic sources: theory, methods and applications

Conveners: Sebastiano D’Amico; Christos Evangelides; Efthimios Sokos; Vaclav Vavrycuk
Lecture Room: Vulcania 1
Chairpersons: Sebastiano D’Amico, Christos Evangelidis

11:30–11:45: ESC2016-121
Source scaling in the Vrancea subcrustal nest (Romania): an overview over the last 75 years
Radulian, Mircea; Popescu, Emilia; Placinta, Anica Otilia; Borleanu, Felix

11:45–12:00: ESC2016-622
Analysis of the State of Stress before and after the Deep Okhotsk Earthquake
Polets, Anastasia

12:00–12:15: ESC2016-469
Amplitude ratios for source mechanism retrieval - the shear-tensile crack vs. moment tensor approach
Jechumtällová, Zuzana; Šílený, Jan

12:15–12:30: ESC2016-21
Composite moment tensor - A tool for studying multiple earthquakes
Vavrycuk, Vaclav

12:30–12:45: ESC2016-25
Semi-automatic P-waveform inversion for focal mechanisms and moment tensors using the principal component analysis
Vavrycuk, Václav; Adamová, Petra

12:45–13:00: ESC2016-473
Earthquake mechanism extended for rupture propagation estimate: West Bohemia/Vogtland swarm 2014 Šílený, Jan; Horálek, Josef

13:00–13:15: Discussion

Chairpersons: Efthimios Sokos, Vaclav Vavrycuk

13:15–13:30: ESC2016-42
Earthquake swarms versus 2014 mainshock-aftershock activity in West Bohemia, Czech Republic
Fischer, Tomáš; Hainzl, Sebastian; Matyska, Ctirad; Heinicke, Jens; Jakoubková, Hana; Bachura, Martin; Vlček, Josef

13:45–14:00: ESC2016-44
Fault-rupture action in real time: carbon dioxide release due to ML 3.5 earthquake in West Bohemia
Fischer, Tomáš; Hainzl, Sebastian; Matyska, Ctirad; Heinicke, Jens; Jakoubková, Hana; Bachura, Martin; Vlček, Josef

14:15–15:00: ESC2016-42
Earthquake swarms versus 2014 mainshock-aftershock activity in West Bohemia, Czech Republic
Jakočková, Hana; Horálek, Josef; Fischer, Tomáš

15:00–15:15: ESC2016-590
High-frequency source imaging of the 2016 April 16 Kumamoto (Japan) earthquake by backprojection of strong motion waveforms
Evangelidis, Christos P.
15:15–15:30: ESC2016-54
The high-frequency waveform inversion - an adequate tool for estimating the focal mechanism of the weak crustal earthquakes of Vrancea region (Romania)
Ardeleanu, Luminita Angela

15:30–15:45: ESC2016-68
Constraints on earthquake nodal planes obtained from regional and teleseismic data
Lentas, Konstantinos; Storchak, Dmitry

15:45–16:00: ESC2016-674
Usage of SH/P amplitude ratios for focal mechanism determination - case study from the Nordland region, Norway
Michalek, Jan; Ottemöller, Lars; Janutyte, Ilma; Lindholm, Conrad

16:00–16:15: ESC2016-229
Fast and cheap approximation of Green functions uncertainty for waveform-based earthquake source inversions
Hallo, Miroslav; Gallovic, Frantisek

16:15–16:30: ESC2016-321
Simulating seismic sources with Discrete Element Method
Klejment, Piotr; Dębski, Wojciech; Kosmala, Alicja; Foltyn, Natalia

16:30–16:45: ESC2016-475
Automated moment tensor inversion with Bayesian approach and noise covariance matrix
Vackar, Jiri; Burjanek, Jan; Zahradnik, Jiří; Gallovič, František

16:45–17:00: ESC2016-669
Source model of the 2012 Ahar-Varzaghan earthquake doublet using elliptical subfault approximation
Momeni, Maalek; Aoudia, Abdelkrim; Tatar, Mohammad; Twardzik, Cedric

17:00–17:15: ESC2016-658
Regional Magnitude Scale for Earthquakes along Spreading Ridges and Transform Faults in Arctic Zone
Kim, Won-Young; Ottemöller, Lars

17:15–17:30: ESC2016-486
Laboratory study of fault slip modes and earthquake radiation efficiency
Kocharyan, Gevorg; Ostapchuk, Alexey; Pavlov, Dmitriy

END OF MONDAY ORAL PROGRAM 07

11:30–13:00

08 Operational earthquake forecasting/prediction: advances in models, observations and verification

Conveners: Angelo De Santis; Vladimir Kossobokov; Dimitar Ouzounov; Gerassimos Papadopoulos; Antonella Peresan; Sergey Pulinets; J.D. Zechar
Lecture Room: Oceania AB
Chairpersons: A. Peresan, V. Kossobokov

Multidisciplinary approach to earthquake forecasting

11:30–11:45: ESC2016-205
Through 47 years of RST analysis of anomalous TIR sequences in relation with earthquakes occurred in different continents and in various geotectonic settings. (invited talk)
Tramutoli, Valerio; Lisi, Mariano; Filizzola, Carolina; Genzano, Nicola; Paciello, Rossana; Pergola, Nicola

11:45–12:00: ESC2016-153
Variations in Gravitational Field, Tidal Force and Earthquakes (Sheki-Greater Caucasus, Azerbaijan)
Kadirov, Fakhiraddin; Telesca, Luciano; Mammadov, Samir; Babayev, Gulam

12:00–12:15: ESC2016-569
Lithosphere-Atmosphere Interface as a background for physical explanation of short-term precursors
Pulinets, Sergey; Ouzounov, Dimitar

12:15–12:30: ESC2016-401
An interdisciplinary approach of utilizing pre-earthquake signals for short-term prediction studies
Ouzounov, Dimitar; Pulinets, Sergey; Hattori, Katsumi; Liu, Tiger; Kafatos, Menas

12:30–12:45: ESC2016-495
SAFE Project: An improved integrated system of earthquake physics study from ground and satellite observations
De Santis, Angelo; De Franceschi, Giorgiana; Di Giovambattista, Rita; Perrone, Loredana; Alfonsi, Lucilla; Cianchini, Gianfranco; Pavón-Carrasco, F. Javier; Cesaroni, Claudio; Spogli, Luca; Piscini, Alessandro; Marchetti, Dedalo; De Santis, Anna; D’Angelo, Giulia; Musièo, Elvira; Malagnini, Andrea; Amoroso, Leonardo; Carbone, Marianna; Abbattista, Cristoforo

12:45–13:00: ESC2016-540
Uranium Groundwater Anomalies and Active Normal Faulting (invited talk)
Plastino, Wolfgan
14:30–17:30

**Chairpersons:** A. De Santis, G. Papadopoulos

**Spatio-temporal properties of earthquake occurrence**

14:30–14:45: ESC2016-512
Temporal and energy parameters of aftershock process of the earthquakes of the Caucas and adjacent territories

Rodina, Svetlana; Lutikov, Alexandr; Doncova, Galina

14:45–15:00: ESC2016-143
On temporary clustering of aftershocks and its dependence on the magnitude of main shock

Zavyalov, Alexey; Guglielmi, Anatoly; Zotov, Oleg; Lavrov, Ivan

15:00–15:15: ESC2016-101
The static behaviour of tectonic aftershocks: From geometric to subdiffusion analysis

Mignan, Arnaud

15:15–15:30: ESC2016-452
Relative frequencies of seismic main shocks after strong shocks in Italy

Gasperini, Paolo; Lolli, Barbara; Vannucci, Gianfranco

15:30–15:45: ESC2016-145
Estimation of the frequency-magnitude Gutenberg-Richter b-value without level of completeness

Kijko, Andrzej; Smit, Ansie

15:45–16:00: ESC2016-536
Operative Forecasting of the hazard from aftershocks of Large Earthquakes

Peter, Shebalin; Sergey, Baranov

**Operational earthquake forecasting**

16:00–16:15: ESC2016-483
A composite model of expected earthquake rates in California based on intermediate-term precursory patterns (invited talk)

Shebalin, Peter

16:15–16:30: ESC2016-80
Forecasting model for Mw >/= 5.0 earthquakes in the Algeria-Morocco region

Mohamed, Hamdache; Jose, Pelaez; Abdel krim, Yelles Chaouche

16:30–16:45: ESC2016-576
Short-term operational earthquake forecasts based on epidemic clustering models

Console, Rodolfo; Murr, Maura; Falcone, Giuseppe; Marzocchi, Warmer

16:45–17:00: ESC2016-288
Operational earthquake forecast: about two decades of CN and M8S algorithms practice in Italy

Peresan, Antonella; Romashkova, Leonitina; Kossobokov, Vladimir; Panza, Giuliano F.

17:00–17:15: ESC2016-529
Global testing of earthquake prediction algorithms

Kossobokov, Vladimir

17:15–17:30: ESC2016-382
Probability does not exist: some considerations on seismic risk mitigation

Guagenti, Elisa; Petrini, Vincenzo

END OF MONDAY ORAL PROGRAM 08

14:30–17:30

**09 Improving ground-motion prediction for regional and site-specific seismic hazard assessments**

Conveners: John Douglas; Benjamin Edwards; Carlo Cauzzi

**Lecture Room:** Oceania C

**Chairpersons:** John Douglas and Carlo Cauzzi

**Uncertainties in ground motion prediction**

14:30–14:45: ESC2016-63
Retrospectively checking the epistemic uncertainty required in logic trees for ground-motion prediction

Douglas, John

14:45–15:00: ESC2016-232
Estimation and Effects of Epistemic Uncertainty in Non-Ergodic Seismic Hazard Analysis

Kuehn, Nicolas; Abrahamson, Norman

15:00–15:15: ESC2016-604
Robustness of Epistemic Uncertainties in Regional Ground Motion Models

Danciu, Laurentiu; Giardini, Domenico

15:15–15:30: ESC2016-329
Partitioning of epistemic uncertainty and aleatory variability in site specific PSHA

Barani, Simone; Spallarossa, Daniele

15:30–15:45: ESC2016-535
Aleatory variability associated with GMPEs versus seismological models: the case of central Italy

Pacor, Francesca; Bindi, Dino; Spallarossa, Daniele; Oth, Adrien; D’Amico, Maria; Felicetta, Chiara

15:45–16:00: ESC2016-249
Contribution of the SIGMA research programme to quantify the uncertainties in seismic hazard assessment

Senfaute, Gloria; Pecker, Alain; Labbé, Pierre; Sidaner, Jean Francois; Berge-Thierry, Catherine; Rzepka, Jean Pierre; Contris, Paolo

16:00–16:15: Discussion

**Site-specific seismic hazard**

16:15–16:30: ESC2016-277
Relaxing the ergodic assumption in Europe and Middle East: from ground motion regional attributes to site-specific hazard curves

Kotha, Sreram-Reddy; Bindi, Dino; Cotton, Fabrice
16:30–16:45: ESC2016-557
Site-specific characterization, single station sigma, host-to-target adjustments and non-linear behavior: Combined effects on seismic hazard estimates.

**Aristizábal, Claudia; Beauval, Céline; Bard, Pierre-Yves**

16:45–17:00: ESC2016-543
Influence of GMPEs on Site-specific Uniform Hazard Spectra. Case study for Iasi, Romania

**Vacareanu, Radu; Pavel, Florin; Iancovici, Mihail; Aldea, Alexandru**

17:00–17:15: ESC2016-124
Soil-invariant seismic hazard and disaggregation

**Iervolino, Junio**

17:15–17:30: ESC2016-39
Selection of Ground Motion Prediction Equations for Probabilistic Seismic Hazard Assessments of the Izmit Bay Bridge

**Li Destri Nicosia, Giovanni; Gülerce, Zeynep**

END OF MONDAY ORAL PROGRAM 09

11:30–13:00

10 Methods and data for the study of earthquakes recorded on pre-WWSSN historical seismograms

**Conveners:** Graziano Ferrari; Josep Batlló

**Lecture Room:** Saturnia

11:30–11:45: ESC2016-35
60 years of parametric instrumental data collection from pre-WWSSN seismic stations

**Di Giacomo, Domenico; Storchak, Dmitry; Villanseauñor, Antonio; Harris, James**

11:45–12:00: ESC2016-183
Modern methods applied to historical seismograms: Perspective and examples

**Okal, Emile**

12:00–12:15: ESC2016-360
The contribution of the Sismos project to the preservation and dissemination of the material heritage of instrumental seismology

**Ferrari, Graziano**

12:15–12:30: ESC2016-435
Preserving analogue seismograms of regional networks. The case of the Institut Cartografic i Geològic de Catalunya (ICGC)

**Batlló, Josep; Montaner, Carme; Olivera, Carme**

12:30–12:45: ESC2016-429
Available data and documentation from Observatori Fabra

**Merino, Maria Teresa; Batlló, Josep; Fleta, Jorge; Susagna, Teresa**

END OF ORAL PROGRAM 21
Posters Monday

04 From school and citizen seismology to geoethics

Conveners: Rémy Bossu; Paul Denton; Paul Earle; Giuseppe Di Capua
Display Time: Mon, 09:00–19:00
Attendance Times: Mon, 10:30–11:30 & 17:30–19:00

04-1: ESC2016-133
With Citizen seismology, Everyone can become a seismologist!
Mazet-Roux, Gilles; Bossu, Rémy; Frobert, Laurent

04-2: ESC2016-412
Transfrontier Macroseismology in Europe
Van Noten, Koen; Sira, Christophe; Lecocq, Thomas; Hinzen, Klaus-G.; Camelbeek, Thierry

04-3: ESC2016-462
Development of the Romanian Educational Seismic Network
Zaharia, Bogdan; Tataru, Dragos; Grecu, Bogdan; Neagoe, Cristian

04-4: ESC2016-650
The project of Interchange work/school in Italy: the experience at INGV
D’Addezieo, Giuliana

END OF POSTER PROGRAM 04

06 Earthquakes in regions of slow lithospheric deformation

Conveners: Susana Custódio; João Fonseca; Pierre Arroucau
Display Time: Mon, 09:00—19:00
Attendance Times: Mon, 10:30–11:30 & 17:30–19:00
Chairpersons: Susana Custódio, Pierre Arroucau

06-1: ESC2016-41
GPS and DInSAR to estimate the ground motions and co-seismic displacements on Feb. 6, 2016 Meinung earthquake, Taiwan
Chen, Horng-Yue; Tung, Hsing

06-2: ESC2016-76
Single Layer Recurrent Neural Network for detection of swarm-like earthquakes in W-Bohemia/Vogtland - the method
Doubravová, Jana; Wisniowski, Jan; Horálek, Josef

06-3: ESC2016-88
The February 1, 2011, Mw=4.7 earthquake: evidence of local extension in western Transbaikalia
Melnikova, Valentina; Seredkina, Alena; Radziminovich, Yan; Melnikov, Aleksander; Giliova, Nadezhda

06-4: ESC2016-105
Earthquakes in the Suha Krajina region in years 2013 and 2014
Čarman, Martina; Godec, Matjaž; Šket Motnikar, Barbara; Zupančič, Polona; Živčič, Mladen

06-5: ESC2016-142
Catalog of focal mechanism solutions for crustal earthquakes in Intra-Carpathian region of Romania
Oros, Eugen; Popa, Mihaela; Ghita, Cristian; Rgozea, Maria; Rau-Vanciu, Adina Florentina; Neagoe, Cristian

06-6: ESC2016-213
An updated database of focal mechanism solutions and stress estimation for the Calabrian Arc region (south Italy)
Sciarolo, Silvia; Totoro, Cristina; Orecchio, Barbara; Presti, Debra; Neri, Giancarlo

06-7: ESC2016-224
Improving the basis for seismic hazard assessment in Germany by combining earthquake catalogues with paleoseismic and neotectonic evidence
Kaiser, Diethelm; Spies, Thomas; Schlitthenhardt, Jörg; Reicherer, Klaus

06-8: ESC2016-282
Reflection of seismotectonic processes in abnormal changes of intensity of the geomagnetic field (on the example of Oguz earthquake in 04.09.2015, ml=5.9, H - 15km, Azerbaijan)
Rzayev, Azay; Yetirmishli, Gurban; Agazade, Afaq

06-9: ESC2016-482
S-wave splitting observed at records of local micro-earthquakes in Reykjanes Peninsula, Island
Boušková, Alena; Hrubcová, Pavla; Vavryčuk, Václav; Horálek, Josef

06-10: ESC2016-560
Observed seismicity and models of postseismic stress relaxation offshore SW Iberia
Neves, Maria; Matias, Luis; Custódio, Susana

06-11: ESC2016-617
Lg wave attenuation tomography for Norway
Demuth, Andrea; Ottemöller, Lars; Keers, Henk

06-12: ESC2016-633
First evidence of seismic activity on a near-shore fault south of Malta, Central Mediterranean
Bozionelos, George; Galea, Pauline; D’Amico, Sebastiano; Agius, Matthew R.

06-13: ESC2016-530
Towards an Improved Catalog of Irish Seismicity in the years 2010 to 2015
Grannell, James; Arroucau, Pierre; Lebedev, Sergei; Molthoff, Martin; Bean, Chris; Horan, Clare; Blake, Tom

END OF POSTER PROGRAM 06
07 Seismic sources: theory, methods and applications

Conveners: Sebastiano D’Amico; Christos Evangelidis; Efthimios Sokos; Vaclav Vavrycuk

Display Times: Mon, 09:00–19:00 & Tue, 09:00–19:00

Attendance Times: Mon, 10:30–11:30 & 17:30–19:00; Tue, 10:30–11:30 & 17:30–19:00

Chairperson: Sebastiano D’Amico

07-1: ESC2016-138
Seismic pattern and focal mechanism determination in the Nisyros region (SE Aegean, Greece)
Kabron, Andreas; Karakonstantis, Andreas; Kapetanidis, Vasileios; Bozianelos, George; Kaviris, George; Voulgaris, Nicholas

07-2: ESC2016-24
Spatiotemporal variation of body-wave velocities in Corinth Gulf (Greece)
Karakonstantis, Andreas; Papadimitriou, Panayotis

07-3: ESC2016-32
Earthquake energy reduction by external action from laboratory simulation
Sobolev, Gennady; Ponomarev, Alexander; Maihuk, Yuri

07-4: ESC2016-33
Papadimitriou, Panayotis; Karakonstantis, Andreas

07-5: ESC2016-112
Complex geometry of the fault system revealed by analysis of locations and focal mechanisms of micro-earthquakes occurring in the 2014 West Bohemia seismic activity
Adamova, Petra; Vavruck, Vaclav; Doubravova, Jana; Jakoubková, Hana

07-6: ESC2016-118
MODELING LARGE PRECURSOR SLIP AT THE DEEPER EXTENSION OF THE SEISMIC REGION ALONG THE NANKAI TROUGH
Ohtani, Makiko; Kame, Nobuki; Nakatani, Masao

07-7: ESC2016-129
Scaling source properties of the earthquake sequence triggered on 22 November 2014 in the South-Eastern Carpathians foredeep area (Romania)
Papiescu, Emilia; Placinta, Anica Otilia; Borleau, Felix; Radulian, Mircea; Moldovan, Iren Adelina; Coman, Alina

07-8: ESC2016-135
An Automated Moment Magnitude (Mw) and Focal Mechanism for the Algerian Digital Seismic Network (ADSN)
Beldjoudi, Hamoud; Ouakedi, Mohamed; Yelles-Chaouche, Abdellkarim; Delouis, Bertrand; Kherroubi, Abdelaziz; dabouz, Ghania

07-9: ESC2016-140
Empirical Green’s function analysis of a moderate earthquake and its largest aftershock north of Algeria
Semmane, Fethi; Benabdelloued, B.Y. Nassim; Heddar, Aicha

07-10: ESC2016-141
Recent seismic activity in Saronikos Gulf (Greece) and investigation of possible volcanic-tectonic features
Papadimitriou, Panayotis; Foufoulakis, Ioannis; Spingos, Ioannis; Karakonstantis, Andreas

07-11: ESC2016-150
Analysis of low magnitude seismic sequences in Calabria
Gervasi, Anna; Napolitano, Ferdinando; Galluzzo, Danilo; La Rocca, Mario; Festa, Rocco Lorenzo; Guerra, Ignazio

07-12: ESC2016-152
The earthquake and its largest aftershock north of Algeria.
Empirical Green’s function analysis of a moderate earthquake and its largest aftershock north of Algeria
Ohtani, Makiko; Kame, Nobuki; Nakatani, Masao

07-13: ESC2016-168
Factors to affect coseismic fold in an overburden
Cai, Yongen; Zeng, Shaoqiang

07-14: ESC2016-193
Seismic moment estimated from th source mechanism of the seismic events during the sequence of the moderate-size crustal earthquake of November 22, 2014 of Vrancea region (Romania)
Craiu, George Marius; Ardeleanu, Luminita; Craiu, Andreia; Diaconescu, Mihail

07-15: ESC2016-196
 Modeling large precursory slip at the deeper extension of the seismic region along the Nankai Trough, SW Japan – Interaction between slow slip events and brittle nucleation –
Ohtani, Makiko; Kame, Nobuki; Nakatani, Masao

07-16: ESC2016-200
Third corner frequency of moderate Kamchatka earthquakes: station estimates agree over a network
Skorkina, Anna A.; Gusev, Dr. Alexander A.

07-17: ESC2016-275
Factors to affect coseismic fold in an overburden
Cai, Yongen; Zeng, Shaoqiang

07-18: ESC2016-410
Diffraction-Stack Imaging of Source and Structure – Application of TAIGER Project in Taiwan
Wang, Haw-Chun; Chen, How-Wei

07-19: ESC2016-646
Seismic moment estimated from the response spectra for small seismic events occurred in North-Eastern Italy
Moratto, Luca; Priolo, Enrico; Saraò, Angela

07-20: ESC2016-331
Empirical Green’s function analysis of a moderate earthquake and its largest aftershock north of Algeria
Semmane, Fethi; Benabdelloued, B.Y. Nassim; Heddar, Aicha

07-21: ESC2016-564
Empirical Green’s function analysis of a moderate earthquake and its largest aftershock north of Algeria
Semmane, Fethi; Benabdelloued, B.Y. Nassim; Heddar, Aicha

07-22: ESC2016-598
Spatiotemporal variation of body-wave velocities in Corinth Gulf (Greece)
Karakonstantis, Andreas; Papadimitriou, Panayotis

07-23: ESC2016-798
Modeling large precursory slip at the deeper extension of the seismic region along the Nankai Trough, SW Japan – Interaction between slow slip events and brittle nucleation –
Ohtani, Makiko; Kame, Nobuki; Nakatani, Masao

07-24: ESC2016-898
Third corner frequency of moderate Kamchatka earthquakes: station estimates agree over a network
Skorkina, Anna A.; Gusev, Dr. Alexander A.

07-25: ESC2016-998
Factors to affect coseismic fold in an overburden
Cai, Yongen; Zeng, Shaoqiang

07-26: ESC2016-193
Diffraction-Stack Imaging of Source and Structure – Application of TAIGER Project in Taiwan
Wang, Haw-Chun; Chen, How-Wei

07-27: ESC2016-275
Empirical Green’s function analysis of a moderate earthquake and its largest aftershock north of Algeria
Semmane, Fethi; Benabdelloued, B.Y. Nassim; Heddar, Aicha

07-28: ESC2016-331
A platform for routine and automatic moment tensor inversion testing - concept and first synthetic data applications
Dahm, Torsten; Heimann, Sebastian; Cesca, Simone
07-22: ESC2016-445
Seismic activity in the gulf of Cadiz inferred from OBS data
Bolrão, Daniela; Matos, Catarina; Greuemeyer, Ingo; Matias, Luis; Custódio, Susana

07-23: ESC2016-568
Multiband magnitude scale for Kamchatka earthquakes: the next step of development
Gusev, Alexander; Chebrov, Daniil; Abubakirov, Iskander; Chebrova, Anastasia; Chemarev, Andrey; Guseva, Evgeniya; Matveenko, Evgeniy; Pavlov, Victor; Skorkina, Anna; Tokarev, Alexander

07-24: ESC2016-459
How radial modes can help with constraining source of relatively weak vertical acceleration generated by strike-slip earthquakes
Zabranová, Eliška; Matyska, Ctirad

07-25: ESC2016-605
Seismicity and 3D tectonic stress field distribution in the western Hellenic Arc
Kassaras, Ioannis; Kapetanidis, Vasilis; Karakonstantis, Andreas

07-26: ESC2016-672
Lowering the threshold of centroid moment tensor estimation by implementing probabilistic shrinking box, source-specific station term method
Nooshiri, Nima; Heimann, Sebastian; Saul, Joachim; Tillmann, Frederik; Dahm, Torsten

07-27: ESC2016-136
Shear-wave splitting characteristics during 2014 in the Western Corinth Gulf (Greece)
Kaviris, George; Millas, Christos; Spingos, Ioannis; Kapetanidis, Vasileios; Karakonstantis, Andreas; Papadimitriou, Panayotis; Voulgaris, Nicholas; Makropoulos, Kostas

07-28: ESC2016-546
Earthquake-induced tsunamis in the northwestern Black Sea
Dimova, Lyuba; Armigliato, Alberto; Pagnoni, Gianluca; Tinti, Stefano; Raykova, Reneta

END OF POSTER PROGRAM 07

08-01: ESC2016-571
Prospectively Evaluating the Collaboratory for the Study of Earthquake Predictability: An Evaluation of the UCERF2 and Updated Five-Year RELM Forecasts
Strader, Anne; Schneider, Max; Schorlemmer, Danijel; Liukis, Maria

08-02: ESC2016-634
Could Complexity theory and Statistical physics be used to support earthquake precursors recognition?
Vallianatos, Filippos

08-03: ESC2016-320
Time-reversal - an efficient method for Bayesian inversion
Debski, Wojciech

08-04: ESC2016-688
Crimea: morphostructural zoning and seismogenic nodes
Gorshkov, Alexander; Soloviev, Alexander

08-05: ESC2016-687
The correlation of the 16 April 2016 Ecuador earthquake M7.8 with the potential nodes (M6.5+) defined in Ecuador in 2010
Gorshkov, Alexander; Chunga, Kervin; Soloviev, Alexander; Michetti, Alessandro; Panza, Giuliano

08-06: ESC2016-77
Multidisciplinary observation evidence of earthquake precursors
Zhang, Shuliang; Li, Bin

08-07: ESC2016-498
Earthquakes from space: examples of electromagnetic anomalies before large earthquakes detected by the ESA Swarm satellite mission
De Santis, Angelo; Marchetti, Dedalo; Balasis, George; Pavón-Carrasco, F. Javier; Mandea, Mioara

08-08: ESC2016-507
ECHO Project: an integrated series of tools for characterizing seismic sequences evolution
Falcone, Giuseppe; De Santis, Angelo; Di Giovambattista, Rita; Cianchini, Gianfranco; Murr, Maura; Calderoni, Giovanna; Lucente, Pio Francesco; De Gori, Pasquale; Signanini, Patrizio; Rainone, Mario; Vessia, Giovanna
08-9: ESC2016-393
Anomalous transients in Radon emission, Earth’s emitted
TIR radiation and seismicity in North Italy
Riggi, Anna; Capobianco, Stefano; Genzano, Nicola;
Lisi, Mariano; Tamaro, Alberto; Santulín, Marco;
Sileo, Giancanio; Tramutoli, Valerio

08-10: ESC2016-427
Tidal evidences of strain sensitivity in mud volcanic fluids
Martinelli, Giovanni; Dadamo, Andrea; Albarelo, Dario

08-11: ESC2016-90
Investigation of local geomagnetic anomalies in
tectonically active region of Armenia (case study)
Simonyan, Anahit; Ohanyan, Marine; Metsoyan, Tigran;
De Santis, Angelo

08-12: ESC2016-682
Strong Earthquakes in Indonesia and Philippines warned
in advance from Space
Fidani, Cristiano

08-13: ESC2016-303
Complexation of signals registered by spatially distributed
network of multi-electrode instrumentation systems
Bobrovskiy, Vadim; Lyubushin, Alexey; Shopin, Sergey

08-14: ESC2016-678
Hardware and software components of complex
geo physical monitoring network for short term
earthquake prediction
Shopin, Sergey; Protopopov, Aleksander; Doda, Leonid;
Natagyanov, Vladimir; Bobrovskiy, Vadim

08-15: ESC2016-618
Seismic forecasting application of Astro-Meteo-Tectonics
concept
Doda, Leonid; Kubyshen, Aleksander; Shopin, Sergey

08-16: ESC2016-703
Global warming of the climate and earthquake prediction
Mavashev, Boris

END OF POSTER PROGRAM 08

10 Methods and data for the study of earthquakes recorded on
pre-WWSSN historical seismograms

Conveners: Graziano Ferrari; Josep Batlló
Display Time: Mon, 09:00–19:00
Attendance Times: Mon, 10:30–11:30 & 17:30–19:00

10-1: ESC2016-573
Romanian Historical Earthquakes: Observation, Recording and Study. What it was done and what will be done
Oros, Eugen; Paulescu, Daniel; Zaharia, Bogdan

10-2: ESC2016-504
Homogenization of magnitude estimates in terms of Mw of Italian earthquakes occurred before 1981
Lolli, Barbara; Gasperini, Paolo; Rebez, Alessandro

10-3: ESC2016-583
What should be done with millions of analog seismograms, containing information acquired prior to the era of digital recording?
Richards, Paul

10-4: ESC2016-361
The 21 August 1962 Irpinia (Southern Italy) seismic sequence: new insight on the first shock
Vannoli, Paola; Bernardi, Fabrizio; Palombo, Barbara;
Vannucci, Gianfranco; Console, Rodolfo;
Ferrari, Graziano

10-5: ESC2016-430
Preservation of seismograms from Observatori Fabra first seismic station (1906-1913)
Merino, Maria Teresa; Andrades, Tana

END OF POSTER PROGRAM 10

21 Earthquake small-aperture arrays

Conveners: Orhan Polat; Benedikt Halldorsson;
Francesca Bianco; Ulubey Ceken
Display Time: Mon, 09:00–19:00
Attendance Times: Mon, 10:30–11:30 & 17:30–19:00
Chairpersons: Orhan Polat, Benedikt Halldorsson, Francesca Bianco, Ulubey Ceken

21-1: ESC2016-73
Signatures of Seismic Waves Using Small Aperture Arrays
Pitarka, Arben

21-2: ESC2016-263
3-D crustal structure from local earthquake array in
Hatay-Maras area, East of Mediterranean region of Turkey
Ozer, Caglar; Gok, Elcin; Polat, Orhan

21-3: ESC2016-466
Identification of seismic events at Mikhnevo small-aperture array by wavelet methods
Sanina, Irina; Nesterkina, Margarita; Konstantinovskaya, Natalya; Riznichenko, Oksana; Danilova, Tatiana;
Goev, Andrey

21-4: ESC2016-468
Estimation of seismological conditions at the sites of nuclear power stations from small aperture array data
Kishkina, Svetlana; Riznichenko, Oksana; Sanina, Irina

21-5: ESC2016-596
Multi-Channel correlation analysis for November, 2014
South-Eastern Carpathians (Romania) sequence
Borleanu, Felix; Placinta, Anca Otilia; Rogozea, Maria;
Popa, Mihaela; Radulian, Mircea

END OF POSTER PROGRAM 21
**N.N. Ambraseys Distinguished Award Lecture**

**Lecture Room:** Saturnia  
**Chairperson:** Atilla Ansal  
**MUSTAFA ERDIK: Earthquake risk assessment**

**11:30–13:00**

**03 Eastern Alpine seismological investigation: state of the art of the Alpine system from the Bohemian Massif to the Adriatic Sea**

**Conveners:** Irene Bianchi; Jaroslava Plomerova; György Hetényi; Edi Kissling; Petr Kolinsky  
**Lecture Room:** Vulcania 2  
**Chairpersons:** Irene Bianchi, Jaroslava Plomerova, Petr Kolinsky

**11:30–11:45: ESC2016-203**  
New insights on the features of earthquake clustering in South-Eastern Alps  
**Peresan, Antonella**; Gentili, Stefania

**11:45–12:00: ESC2016-333**  
Seismicity spatial organization and damage pattern at the Alps-Dinarides transition  
**Bressan, Gianni**; Ponton, Maurizio; Rossi, Giuliana; Urban, Sandro

**12:00–12:15: ESC2016-226**  
Attenuation of high-frequency body waves and its anisotropy in the External Dinarides  
**Dasović, Iva**; Namjesnik, Dalija; Belinić, Tena; Majstorović, Josipa; Herak, Davorka; Herak, Marijan

**12:15–12:30: ESC2016-109**  
Local earthquake tomography in the junction domain between Southeastern Alps and Dinarides using the seismic data of the CE3RN  
**Colavitti, Leonardo**; Tiberi, Lara; Böhm, Gualtiero; Costa, Giovanni; Gallo, Antonella

**12:30–12:45: ESC2016-519**  
True backazimuths of surface waves from teleseismic earthquakes across AlpArray Austria measured by two independent methods  
**Kolínský, Petr**; Fuchs, Florian; Bokelmann, Götz; and AlpArray Working Group

**12:45–13:00: ESC2016-174**  
Two divergently dipping roots of mantle lithosphere beneath the Alps  
**Plomerova, Jaroslava**; Babuska, Vladislav

END OF ORAL PROGRAM 03

**14:30–17:30**

**05 40th anniversary of 1976 Friuli earthquakes - lessons learned**

**Conveners:** Ida Cecić; Dario Slejko  
**Lecture Room:** Vulcania 2  
**Chairpersons:** Cecić, Slejko

**14:30–14:45: ESC2016-514**  
What science remains of the 1976 earthquake?  
**Slejko, Dario**

**14:45–15:00: ESC2016-324**  
The modern plot and use of the regional pattern of damage (intensity) of 6 May 1976  
**Pettenati, Franco**; Sirovich, Livio; Sandron, Denis

**15:00–15:15: ESC2016-516**  
6 May 1976 Friuli Earthquake - Re-evaluation of Macroseismic Data  
**Cecić, Ida**; Meurers, Rita; Tertulliani, Andrea; Grünthal, Gottfried; Kaiser, Diethelm; Sović, Ivica

**15:15–15:30: ESC2016-651**  
The 1976 Friuli earthquake: a shallow, blind and complex thrust with surface folding  
**Aoudia, Abdelkrim**

**15:30–15:45: ESC2016-691**  
Misunderstood "forecasts"  
**Slejko, Dario**; Cecić, Ida; Renner, Gianfranco; Rebez, Alessandro

**15:45–16:00: ESC2016-378**  
The fallout of the Friuli earthquake  
**Petrini, Vincenzo**

**16:00–16:15: ESC2016-623**  
The regional body of laws that accompanied the reconstruction of Friuli  
**Carpenedo, Diego**

**16:15–16:30: ESC2016-411**  
The protection from damages given by seismic classification and code.  
**Riuscetti, Marcello**

**16:30–17:00: ESC2016-710**  
Development of emergency management after the Friuli and Irpinia experiences (invited talk)  
**Zambrelli, Giuseppe**

**17:00–17:15: ESC2016-693**  
The contribution of Friuli’s earthquake to the knowledge of seismic behavior of historical buildings  
**Dolgioni, Francesco**; Moretti, Alberto

**17:15–17:30: ESC2016-388**  
The heritage of the 1976 Friuli earthquake  
**Slejko, Dario**; Santulin, Marco; Riuscetti, Marcello; Rebez, Alessandro; Carulli, Giovanni Battista; Grimaz, Stefano; Cucchi, Franco

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<th>Time</th>
<th>Session</th>
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<th>Conveners</th>
<th>Lecture Room</th>
<th>Chairpersons</th>
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<tr>
<td>11:30–13:00</td>
<td><strong>07 Seismic sources: theory, methods and applications</strong></td>
<td>11:30–11:45: ESC2016-94 Challenges of moment tensor inversion for shallow explosions: the January 6, 2016, North Korea nuclear test case</td>
<td>Cesca, Simone; Heimann, Sebastian; Kriegerowski, Marius; Dahm, Torsten; Saul, Joachim</td>
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<td>Sebastiano D’Amico, Christos Evangelidis, Efthimios Sokos, Vaclav Vavrycuk</td>
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<td>12:00–12:15: ESC2016-37 The 16 April 2015 Mw 6.0 off-shore eastern Crete earthquake and its aftershock sequence: implications for local/regional seismotectonics</td>
<td>Gorgun, Ethem; Kekovali, Kivanc; Kalafat, Dogan</td>
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<td>12:15–12:30: ESC2016-241 Focal Mechanism and Tectonic Deformation in Seismogenic Area of the 2013 Lushan Earthquake Sequence, China</td>
<td>Yi, Guixi; Vallage, Amaury; Long, Feng; Klinger, Yann</td>
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<td>12:30–12:45: ESC2016-106 The Beni-Ilmane Seismic Sequence of May 2010: Seismic Sources and Stress Tensor Calculations</td>
<td>Beldjoudi, Hamoud; Delouis, Bertrand; Yelles-Chaouche, Abdelkarim; Gharbi, Sofiane</td>
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<td>12:45–13:00: ESC2016-365 Moment Tensor Inversion of Earthquakes in the Sea of Marmara and Surroundings: Restraining Bend between the Ganos Fault and the Main Marmara Fault</td>
<td>Coskun, Zeynep; Pinar, Ali</td>
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<th>Time</th>
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<th>Lecture Room</th>
<th>Chairpersons</th>
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<tr>
<td>11:30–13:00</td>
<td><strong>08 Operational earthquake forecasting/prediction: advances in models, observations and verification</strong></td>
<td>11:30–11:45: ESC2016-579 Foreshocks as a powerful earthquake precursor</td>
<td>Papadopoulos, Gerassimos; Minadakis, George; Di Fiore, Boris</td>
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<td>Angelo De Santis, Vladmir Kossobokov, Dimitar Ouzounov, Gerard Papadopoulos, Antonella Peresan, Sergey Pulinets, J.D. Zechar</td>
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<td>11:45–12:00: ESC2016-86 An approach to automatic prediction of earthquakes: techniques, tools, and case studies</td>
<td>Gitis, Valeri; Derendyaev, Alexander</td>
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<td>Sebastiano D’Amico, Christos Evangelidis, Efthimios Sokos, Vaclav Vavrycuk</td>
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<td>12:00–12:15: ESC2016-87 Online monitoring and analyses of seismic activity</td>
<td>Derendyaev, Alexander; Gitis, Valeri</td>
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<td>12:15–12:30: ESC2016-72 Long-range coherence of seismic noise properties before strong earthquakes</td>
<td>Lyubushin, Alexey</td>
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<td>12:30–12:45: ESC2016-58 Ten years of electromagnetic recordings by the Central Italy Electromagnetic Network (CIEN)</td>
<td>Fidani, Cristiano</td>
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<td>12:45–13:00: ESC2016-246 The role of deep degassing in the problem of earthquake prediction and mining accidents with gas explosions</td>
<td>Natyaganov, Vladimir; Stepanov, Ivan; Syvorotkin, Vladimir; Shopin, Sergey</td>
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END OF ORAL PROGRAM 08
09 Improving ground-motion prediction for regional and site-specific seismic hazard assessments

Conveners: John Douglas; Benjamin Edwards; Carlo Cauzzi
Lecture Room: Oceania C

Chairpersons: John Douglas and Carlo Cauzzi

Regional seismic hazard studies and ground motion models

11:30–11:45: ESC2016-328
Did two decades of ground motion prediction equations improve seismic hazard estimates in Italy?
Barani, Simone; Albarello, Dario; Massa, Marco; Spallarossa, Daniele

11:45–12:00: ESC2016-210
Ranking ground-motion prediction models in different seismotectonic contexts: the experience for the new Italian seismic hazard model (MPS16)
Lanzano, Giovanni; Luzi, Lucia; Pacor, Francesca; Puglia, Rodolfo; D’Amico, Vera; Meletti, Carlo; Marzocchi, Warner; Rotondi, Renata; Varini, Elisa

12:00–12:15: ESC2016-273
Ground motion prediction equation tailored for specific hazard assessment: the case of updating PSHA in Germany
Bindi, Dino; Cotton, Fabrice; Grunenthal, Gottfried; Bosse, Christian; Kotha, Sreeram-Reddy

12:15–12:30: Discussion

12:30–12:45: ESC2016-116
Austrian empirical seismic ground motion models and site effects
Weginger, Stefan; Jia, Yan; Lenhardt, Wolfgang

12:45–13:00: ESC2016-326
A new 3D attenuation model for the southern Aegean subduction zone: Implications for the ground-motion prediction equations of intermediate earthquakes.
Kkallas, Harris; Ventouzi, Chrisa; Papazachos, Costas; Boore, David; Margaris, Vasilis

14:30–17:15
Chairpersons: John Douglas and Carlo Cauzzi

Synthetic and near-source ground motion modelling

14:30–14:45: ESC2016-66
Using ground-motion simulations to estimate components of aleatory variability and the level of stress accumulation
Aochi, Hideo; Douglas, John; Ulrich, Thomas

END OF ORAL PROGRAM 09
12 Induced and triggered seismicity: Mechanisms, monitoring, discrimination and management strategies

Conveners: Francesco Grigoli; Enrico Caffagni; Götz Bokelmann; Simone Cesca; Wolfgang Lenhardt; Beata Orlecka-Sikora; Enrico Priolo
Lecture Room: Saturnia

11:30–12:00: ESC2016-376
The Castor Project: Beyond technical and scientific knowledge (invited talk)
García-Fernández, Mariano; Jiménez, María-José

12:00–12:15: ESC2016-20
Full-waveform location methods in microseismic monitoring operations
Grigoli, Francesco; Cesca, Simone

12:15–12:30: ESC2016-100
The static behaviour of induced seismicity: From geometric to risk analysis
Mignan, Arnaud

12:30–12:45: ESC2016-137
Static stress drop of induced earthquakes in seismic hazard assessment: Preliminary results from The Geysers geothermal site
Staszek, Monika; Orlecka-Sikora, Beata; Kwiatek, Grzegorz

12:45–13:00: ESC2016-165
Preliminary results for Space-Time Clustering of Seismicity and its Connection to Stimulation Processes, in North-Western Geysers Geothermal Field
Leptokaropoulos, Konstantinos; Staszek, Monika; Lasocki, Stanislaw; Kwiatek, Grzegorz

13:00–13:15: ESC2016-376
The problem with magnitudes calculated using nearby stations
Luckett, Richard; Butcher, Antony

13:15–13:30: ESC2016-233
Recent seismicity in the northern German gas fields - induced and tectonic?
Joswig, Manfred; Gurbisz, Zaneta; Mokelke, Gregor; Sick, Benjamin; Walter, Marco

13:30–13:45: ESC2016-239
Induced seismicity near Beni-Haroun dam (northeastern Algeria)
Yelles-Chaouche, Abdelkarim; Abacha, Issam; Semmiane, Fethi

13:45–14:00: ESC2016-257
Coupled hydro-mechanical modelling of seismicity induced by gas production
Zbinden, Dominik; Rinaldi, Antonio Pio; Urpi, Luca; Wiemer, Stefan

14:00–14:15: ESC2016-261
Seismic source parameters of the induced seismicity at The Geysers geothermal area, California, by a generalized inversion approach
Picozzi, Matteo; Oth, Adrien; Parolai, Stefano; Bindi, Dino; De Landro, Grazia; Amoroso, Ortensia

14:15–14:30: ESC2016-266
Numerical modeling of seismicity induced by large-scale CO₂ injection in a multilayered sedimentary system (invited talk)
Rinaldi, Antonio Pio; Urpi, Luca; Rutqvist, Jonny; Cappa, Frederic; Vilarrasa, Victor; Jeanne, Pierre

14:30–14:45: ESC2016-272
High-sensitivity seismic monitoring of the Collalto gas storage (Northern Italy) shows no induced seismicity
Romano, Maria Adelaide; Priolo, Enrico; Garbin, Marco; Romanelli, Marco; Plasencia, Milton; Peruzza, Laura

14:45–15:00: ESC2016-334
Stress changes, focal mechanisms and earthquake scaling laws for a magma-filled crack.
Passarelli, Luigi; rivalta, Eleonora; Cesca, Simone; Aoki, Yosuke

15:00–15:15: ESC2016-214
Induced and tectonic?

15:15–15:30: ESC2016-233
Recent seismicity in the northern German gas fields - induced and tectonic?
Joswig, Manfred; Gurbisz, Zaneta; Mokelke, Gregor; Sick, Benjamin; Walter, Marco

15:30–15:45: ESC2016-239
Induced seismicity near Beni-Haroun dam (northeastern Algeria)
Yelles-Chaouche, Abdelkarim; Abacha, Issam; Semmiane, Fethi

15:45–16:00: ESC2016-257
Coupled hydro-mechanical modelling of seismicity induced by gas production
Zbinden, Dominik; Rinaldi, Antonio Pio; Urpi, Luca; Wiemer, Stefan

16:00–16:15: ESC2016-261
Seismic source parameters of the induced seismicity at The Geysers geothermal area, California, by a generalized inversion approach
Picozzi, Matteo; Oth, Adrien; Parolai, Stefano; Bindi, Dino; De Landro, Grazia; Amoroso, Ortensia

16:15–16:30: ESC2016-266
Numerical modeling of seismicity induced by large-scale CO₂ injection in a multilayered sedimentary system (invited talk)
Rinaldi, Antonio Pio; Urpi, Luca; Rutqvist, Jonny; Cappa, Frederic; Vilarrasa, Victor; Jeanne, Pierre

16:30–16:45: ESC2016-272
High-sensitivity seismic monitoring of the Collalto gas storage (Northern Italy) shows no induced seismicity
Romano, Maria Adelaide; Priolo, Enrico; Garbin, Marco; Romanelli, Marco; Plasencia, Milton; Peruzza, Laura

16:45–17:00: ESC2016-334
Stress changes, focal mechanisms and earthquake scaling laws for a magma-filled crack.
Passarelli, Luigi; rivalta, Eleonora; Cesca, Simone; Aoki, Yosuke

17:00–17:15: ESC2016-319
High resolution 3D imaging of the Irpinia active fault zone part 1: Attenuation tomography
Amoroso, Ortensia; Russo, Guido; De Landro, Grazia; Zollo, Aldo; Garambois, Stephane; Mazzoli, Stefano; Parente, Mariano; Virieux, Jean

END OF TUESDAY ORAL PROGRAM 12
14:30–17:30

13 From active faulting and geodynamic data to the assessment of seismic hazard: New constraints and challenges ahead

Conveners: Vanja Kastelic; Kurt Decker; Katalin Gribovszki; Andrea Hampel; Erika Hegymegi; Antonella Peresan; Karin Sesetyan; Gianluca Valensise

Lecture Room: Vulcania 1

Chairpersons: Kastelic, Decker, Valensise, Sesetyan

14:30–14:35: Introduction of the Session

Active faults and fault databases in seismic hazard studies

14:35–14:50: ESC2016-479

From neotectonic data to seismogenic sources in South America: Results and lessons learned from the SARA project

Costa, Carlos; García, Julio; Alvarado, Alexandra; Audemard, Franck; Audin, Laurence; Benavente, Carlos; Bezerra, F. Hilario; Cembrano, José; González, Gabriel; López, Myriam; Minaya, Estela; Paolini, Mónica; Pérez, Irene; Santibanez, Isabel; Arcila, Mónica; Delgado, Fabrizio; Pagani, Marco

14:50–15:05: ESC2016-563

Neotectonics in the SW Pannonian Basin: Active faults in the Bilogora area (NE Croatia) and assessment of their seismogenic potential

Matoš, Bojan; Tomljenović, Bruno; Herak, Marijan; Zajc, Marjana

15:05–15:20: ESC2016-286

The Dinaric Faults System: large-scale structure and rates of slip of the transpressive northeastern boundary of the Adria microplate

Moulin, Adrien; Benedetti, Lucilla; Rizza, Magali; Jamsek-Rupnik, Petra; Gosar, Andrej; Boulès, Didier; Ritz, Jean-François

15:20–15:35: ESC2016-654

Database of active faults as a first step towards new seismogenic hazard map of Slovenia

Atanackov, Jure; Jamšek Rupnik, Petra; Jež, Jernej; Milanič, Blaž; Celarc, Bogomir; Novak, Matevž; Markelj, Anže; Bavec, Miliš

15:35–15:50: ESC2016-608

Fifteen years of loyal service to the seismic hazard community: the Database of Individual Seismogenic Sources: relevance and opportunities

Basil, Roberto; Burrato, Pierfrancesco; Fracassi, Umberto; Kastelic, Vanja; Maesano, Francesco Emanuele; Tiberti, Mara Monica; Tarabusi, Gabriele; Valensise, Gianluca; Vannoli, Paola

15:50–15:55: Discussion

Crustal and subduction fault characteristics and their seismicity

15:55–16:25: ESC2016-455

Bayesian estimation of paleo-earthquake magnitudes from multiple observations (invited talk)

Hintersberger, Esther; Decker, Kurt

16:25–16:40: ESC2016-219

Review of seismic gaps and gap model for the South American subduction zone

Roth, Frank; Dahm, Torsten; Hainzl, Sebastian

16:40–16:55: ESC2016-577

Three-dimensional numerical modeling of temperature and dehydration fields associated with subduction of the Philippine Sea plate, southwest Japan

Yoshioka, Shoichi; Ji, Yingfeng; Matsumoto, Takumi

16:55–17:10: ESC2016-357

Seismicity and nowadays movements along northern part of Aegean region - Bulgaria

Protopopova, Valentina; Georgiev, Ivan; Botev, Emil; Kakar, Najibullah

17:10–17:25: ESC2016-616

Kinematics of present-day 3D surface displacement of the southwester Tien Shan with GPS and InSAR data: Implications for active tectonics and seismic hazards

Li, Jie; Wang, Xiaojian; Wang, Qi; Liu, Daqing; Kuzikov, Sergey; Wang, Haitao; Qiao, Xuejun

17:25–17:30: Discussion

END OF TUESDAY ORAL PROGRAM 13

14:30–17:30

14 Engineering seismology in the risk evaluation of built environment (Joint ESC-EAEE session)

Conveners: Angelo Masi; Maria Rosaria Gallipoli; Stefano Grimaz; Fabio Romanelli

Lecture Room: Oceania AB

14:30–14:35: Introduction

Ground motion and seismic action

14:35–14:50: ESC2016-64

Nonlinear seismology, the seismology of this Century

Marmureanu, Gheorghe; Marmureanu, Alexandru; Cioflan, Carmen; Ionescu, Constantin; Manea, Florinela; Toma-Danila, Dragos

14:50–15:05: ESC2016-28

Development of seismic hazard maps for Northeast of Algeria

Mouloud, Hamidatou; Stromeyer, Dietrich; Cotton, Fabrice
15:05–15:20: ESC2016-50
Comparison of ground motion parameters from ground motion simulations and the equivalent linear method
Farrugia, Daniela; Galea, Pauline; D’Amico, Sebastiano; Bozionelos, George

15:20–15:35: ESC2016-513
MPS16: towards the updated Italian seismic hazard model
Meletti, Carlo; Marzocchi, Warner; Albarello, Dario; D’Amico, Vera; Luzi, Lucia; Martinelli, Francesca; Pace, Bruno; Pignone, Maurizio; Rovida, Andrea; Visini, Francesco; and Mps16 Working Group

15:50–16:00: Discussion

16:00–16:15: ESC2016-456
A Probabilistic Methodology for Site Specific Response Analysis
Ansal, Atilla; Tönük, Gökçe; Kurtuluş, Aslı

16:15–16:30: ESC2016-465
The multi-site probabilistic seismic hazard analysis in REASSESS V2.0
Iervolino, Ianio; Chioccarelli, Eugenio; Cito, Pasquale

16:30–16:45: ESC2016-683
Engineering Validation of Simulated Ground Motions for Building Damage Assessment
Galasso, Carmine; Tsioulou, Alexandra

16:45–17:00: ESC2016-340
Definition of Seismic Action relevant for Non-structural Earthquake Damage - Case studies from KnowRISK test sites
Tusa, Giuseppina; Rupakhety, Rajesh; Meroni, Fabrizio; Langer, Horst; Musacchio, Gemma; Lopes, Mario; Candeias, Paulo Xavier and the KnowRISK (1,2,3,4) Team

17:00–17:15: ESC2016-349
Built environment response during earthquake: site-city interaction and clustering effect of buildings
Gueguen, Philippe; Colombi, Andrea; Roux, Philippe

17:15–17:30: Discussion

END OF TUESDAY ORAL PROGRAM 14
**Posters Tuesday**

03 Eastern Alpine seismological investigation: state of the art of the Alpine system from the Bohemian Massif to the Adriatic Sea

Conveners: Irene Bianchi; Jaroslava Plomerova; György Hetényi; Edi Kissling; Petr Kolinsky

Display Time: Tue, 09:00–19:00

Attendance Times: Tue, 10:30–11:30 & 17:30–19:00

Chairpersons: Irene Bianchi, Jaroslava Plomerova, Petr Kolinsky

03-1: ESC2016-302
Adria-Europe crustal structure relationship and the Moho gap in the Eastern Alps (project EASI)
Hetényi, György; Plomerová, Jaroslava; Bianchi, Irene; Kampfová Exnerová, Hana

03-2: ESC2016-199
Structure of the crust beneath Northeast Italy and Slovenia from ambient noise tomography
Guidarelli, Mariangela; Aoudia, Abdelkrim; Costa, Giovanni

03-3: ESC2016-191
Local Earthquake P-wave Tomography of Central and Western Slovenia
Bajc, Jurij; Černe, Luka; Čarman, Martina; Živčič, Mladen

03-4: ESC2016-167
Lithospheric thickness under the Dinarides
Belinić, Tena; Stipčević, Josip

03-5: ESC2016-127
Multiple event location analysis of aftershock sequences in the Pannonian basin
Békési, Eszter; Süle, Bálint; Bondár, István

03-6: ESC2016-34
Shallow crustal anisotropy studied from S-wave splitting observed at records of local micro-earthquakes in West Bohemia, Czech Republic
Doubravova, Jana; Bouskova, Alena; Vavrycuk, Vaclav

03-7: ESC2016-126
AlpArray in Hungary: The Hungarian temporary broadband seismic network and its characteristics
Gráczer, Zoltán; Bondár, István; Czanik, Csenge; Györi, Erzsébet; Süle, Bálint; Szanyi, Gyöngyvér; Szűcs, Eszter; Wesztergom, Viktor; Wéber, Zoltán

03-8: ESC2016-594
Spatial distribution of scattering and absorption features revealed by coda waves from intermediate depth earthquakes in the Vrancea region (Romania)
Borleau, Felix; De Siena, Luca; Thomas, Christine; Popa, Mihaela; Radulian, Mircea

03-9: ESC2016-78
Models of crustal structure in western part of Romania using joint inversion of Green functions and receiver functions
Bala, Andrei; Tataru, Dragos; Grecu, Bogdan

03-10: ESC2016-281
Automated inter-station phase velocity measurements across the eastern Mediterranean and Middle East
El-Sharkawy, Amr; Weidle, Christian; Cristiano, Luigi; Soomro, Riaz; Lebedev, Sergei; Meier, Thomas

END OF POSTER PROGRAM 03

05 40th anniversary of 1976 Friuli earthquakes - lessons learned

Conveners: Ina Cecić; Dario Slejko

Display Time: Tue, 09:00–19:00

Attendance Times: Tue, 10:30–11:30 & 17:30–19:00

Chairpersons: Slejko, Cecić

10:30–10:40: Opening of the session: brief poster summary presentations

05-1: ESC2016-517
6 May 1976 Friuli Earthquake - Re-evaluation of Macroseismic Data, a New Map and Comparison With Old Intensity Estimates
Cecić, Ina; Grünthal, Gottfried; Kaiser, Diethelm; Meurers, Rita; Sović, Ivica; Tertulliani, Andrea

05-2: ESC2016-227
Contributes from a posteriori studies on the damage of buildings affected by the 1976 Friuli earthquake (NE of Italy)
Grimaz, Stefano; Malisan, Petra

05-3: ESC2016-692
Short-term countermeasures for securing cultural heritage buildings during a seismic emergency. Lessons learnt and enhancement form the 1976 Friuli earthquake.
Grimaz, Stefano; Zorzini, Fabio; Malisan, Petra

END OF POSTER PROGRAM 05
09 Improving ground-motion prediction for regional and site-specific seismic hazard assessments

Conveners: John Douglas; Benjamin Edwards; Carlo Cauzzi

Display Times: Mon, 09:00–19:00 & Tue, 09:00–19:00
Attendance Times: Mon, 10:30–11:30 & 17:30–19:00
Tue, 10:30–11:30 & 17:30–19:00
Chairpersons: John Douglas and Carlo Cauzzi

Miscellanea

09-1: ESC2016-305
About the differences between ground motion relation and regression model
Raschke, Mathias

09-2: ESC2016-170
On the applicability of the Virtual Earthquake Approach (VEA) to predict ground motion using the ambient seismic field in the Vienna Basin area
Schippkus, Sven; Zigone, Dimitri; Bokelmann, Götz; and AlpArray Working Group

09-3: ESC2016-194
Scaling of source spectral parameters of moderate Kamchatka earthquakes: the prominent mismatch between trends for spectral and apparent stress drop
Gusev, Alexander A.; Skorkina, Anna A.; Guseva, Evgenia M.

09-4: ESC2016-270
A Comparison of Ground Motion Prediction Equations with Different Magnitude Scales
Yeh, Yeong Tein; Peng, Wen Fei; Yu, Ting Tu; Lo, Yi-Chia

09-5: ESC2016-171
Variability of the ground motion in Northern Italy
Lanzano, Giovanni; D'Amico, Maria; Felicetta, Chiara; Luzi, Lucia; Pacor, Francesca; Puglia, Rodolfo

09-6: ESC2016-29
Near-Field Geometrical Decay from Large Magnitude Earthquakes: Comparing Empirical and Simulation Approaches
Holt, James; Edwards, Benjamin; Bie, Lidong; Dalguer, Luis; Rietbrock, Andreas

09-7: ESC2016-55
Strong ground motion spatial patterns generated by the intermediate-depth earthquakes of Vrancea region, Romania
Cristian, Ghita; Luminita, Ardeleanu; Bogdan, Grecu; Andreea, Craiu; Cristian, Neagoe

Numerical simulations of site response

09-8: ESC2016-615
From linear to non-linear site transfer functions: a statistical comparison between instrumental data and 1D numerical simulation results
Al Makari, Michelle; Régnier, Julie; Salameh, Christelle; Cadet, Héléoise; Derras, Bounédhiène; Bard, Pierre-Yves; Lopez-Caballero, Fernando

09-9: ESC2016-588
A study of topographic effects by simulation
Peng, Wen Fei; Yeh, Yeong Tein; Yu, Ting Tu

European and global studies

09-10: ESC2016-527
A Pan-European Representative Ground Motion Model
Garcia-Fernández, Mariano; Gehl, Pierre; Jiménez, María José; D’Ayala, Dina

09-11: ESC2016-274
Characteristics of the EPOS strong-motion flat file for Ground Motion Prediction Equations selection in Europe
Puglia, Rodolfo; Bindi, Dino; Luzi, Lucia; Cotton, Fabrice; and the W8.4-ESM & W8.6-GMPE EPOS working groups Team

09-12: ESC2016-457
Anatomy of sigma as suggested by a global dataset of digital acceleration waveforms and associated metadata
Cauzzi, Carlo

Special focus: Iran

09-13: ESC2016-522
Analysis of Iranian Strong Motion Data and Comparison with Pan-European and Global Ground Motion Models
Mehrabi, Fatemeh; Mirzaei, Noorbakhsh; Bindi, Dino; Cotton, Fabrice; Shabani, Elham; R. Kotha, Sreeeram

09-14: ESC2016-639
An investigation on possibility of combination of Iran and California strong-motion datasets using analysis of variance
Darzi, Atefe; Zolfaghari, Mohammad R; Fäh, Donat; Cauzzi, Carlo

09-15: ESC2016-332
An Evaluation of the Applicability of the NGA 2008 and NGA 2014 Models to Ground-Motion Prediction in the Iranian Plateau
Azarbakht, Alireza; Rajabi, Zinat; Rahpeyma, Sahar

09-16: ESC2016-645
Estimation of Kappa, geometrical spreading and quality factor of shear-wave in the Zagros region
Sadeghi-Bagherabadi, Amir; Sobouti, Farhad; Aoudia, Abdelkrim

09-17: ESC2016-533
QQ-SRTK, a Python Toolkit for Seismic Site Response Analysis
Poggi, Valerio; Weatherill, Graeme; Garcia, Julio; Pagani, Marco; Irnaka, Marwan

END OF POSTER PROGRAM 09
12 Induced and triggered seismicity: mechanisms, monitoring, discrimination and management strategies

Conveners: Francesco Grigoli; Enrico Caffagni; Götz Bokelmann; Simone Cesca; Wolfgang Lenhardt; Beata Orlecka-Sikora; Ennio Priolo

Display Times: Tue, 09:00–19:00 & Wed, 09:00–19:00
Attendance Times: Tue, 10:30–11:30 & 17:30–19:00
Wed, 10:30–11:30 & 17:30–19:00

12-1: ESC2016-59
Detailed microseismicity study in the area of Florina (Greece): Evidence for fluid driven seismicity
Mesimeri, Maria; Karakostas, Vassilios; Papadimitriou, Eleftheria; Tsaklidis, George; Tsapanos, Theodoros

12-2: ESC2016-166
Space-time distribution of foreshock, aftershock and swarm activity in and near Bulgaria
Raykova, Plamena; Solakov, Dimcho; Simeonova, Sella

12-3: ESC2016-173
EPOS Thematic Core Service "Anthropogenic Hazards" - e-research platform
Orlecka-Sikora, Beata; Lasocki, Stanislaw;
Lizurek, Grzegorz; Grasso, Jean Robert; Schmittbuhl, Jean; Kwiatek, Grzegorz; Gasparini, Paolo; Garcia, Alexander; Cassidy, Nigel; Sterzel, Mariusz; Szepieniec, Tomasz; Mutke, Grzegorz; Mineva, Sauka; Kozlovskaya, Elena; Bigarre, Pascal; Schaming, Marc; Sileny, Jan; Fischer, Tomáš; Saccarotti, Gilberto; Toon, Sam

12-4: ESC2016-265
Automated detection and location of picroseismicity of hydraulic fracturing experiment using continuous waveforms
López Comino, José Ángel; Heimann, Sebastian; Cesca, Simone; Milkereit, Claus; Dahm, Torsten; Zang, Arno

12-5: ESC2016-292
Seismic and aseismic slip measured during a meter-scale fluid injection experiment into a fault
Duboeuf, Laure; De Barros, Louis; Deschamps, Anne; Cappa, Frédéric; Guglielmi, Yves

12-6: ESC2016-304
Seismic event discrimination: Application to metropolitan France
Maggi, Alessia; Lambotte, Sophie

12-7: ESC2016-215
Development of the seismic monitoring system at Vakhnekmisky potash deposit
Shulakov, Denis

12-8: ESC2016-306
Induced seismicity caused by hydraulic fracturing in deep geothermal wells in Germany and adjacent areas
Plenefisch, Thomas; Brückner, Lisa; Ceranna, Lars; Gestermann, Nicola; Houben, Georg; Tischner, Torsten; Wegler, Ulrich; Wellbrink, Matthias; Bönne, Christian; Bertram, Andreas; Kirschbaum, Bernd

12-9: ESC2016-312
Seismic network design for the monitoring of natural gas reservoir of "Sant'Andrea" (Treviso, Northern Italy)
Carannante, Simona; D'Almea, Ezio; Lovati, Sara; Massa, Marco; Auglieri, Paolo; Franceschina, Gianlorenzo

12-10: ESC2016-381
Dynamic triggering of seismic activity in the Cape Verde hot spot, north Atlantic
Nunes, Miguel; Silveira, Graça; Peng, Zhigang; Custódio, Susana

12-11: ESC2016-323
The relationship between pre-existing geological structures and seismicity induced by wastewater disposal in Val d'Agri (Southern Apennine, Italy)
Buttinelli, Mauro; Improta, Luigi; Bagh, Samer; Chiarabba, Claudio

12-12: ESC2016-371
Deep Geothermal Energy Production: case study of the impact of induced seismicity using probabilistic methods in combination with microtremor measurement for site effect estimation
Schlittenhardt, Joerg; Spies, Thomas; Horstmann, Tobias; Brüstle, Andrea; Schmidt, Bernd

12-13: ESC2016-464
Microseismicity recorded before geothermal exploitation at Torre Alfina (Italy)
Braun, Thomas; Badiali, Lucio; Caciagli, Marco; Carapezza, Marisa; Famiani, Daniela; Frepoli, Alberto; Gattuso, Alessandro; Lisi, Arianna; Marchetti, Alessandro; Mele, Giuliana; Pagliuca, Nicola

12-14: ESC2016-511
Seismic network detection capability within the natural gas fields in Northern Germany
Gestermann, Nicola; Plenefisch, Thomas; Kraft, Toni; Herrmann, Marcus

12-15: ESC2016-467
Preliminary site-effects characterization by inversion of HVSR data in mining area
Olszewska, Dorota; Kula, Damian

12-16: ESC2016-665
Repeated seismic activity triggered by mantle-derived CO2
Fischer, Tomáš; Hainzl, Sebastian; Matyska, Ctirad; Heinicke, Jens; Jakoubková, Hana; Bachura, Martin; Viček, Josef
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<th>Session</th>
<th>Title</th>
<th>Speakers</th>
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<td>12-17: ESC2016-17</td>
<td>Interferometric location of microseismic events induced by gas storage operations</td>
<td>Grigoli, Francesco; Cesca, Simone; Vuan, Alessandro; Priolo, Enrico</td>
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<td>12-18: ESC2016-518</td>
<td>Induced seismicity in Groningen, the Netherlands</td>
<td>Dost, Bernard; Spetzler, Jesper</td>
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<td>12-19: ESC2016-554</td>
<td>Sensitivity of kinematic and dynamic parameters of induced seismic events to sensor coverage (Garpenberg Mine, Sweden)</td>
<td>Erguncu Güçlü, İrem; Dineva, Savka; Grigoli, Francesco; Fjellström, Peter; Karaman, Abdullah</td>
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<td>12-20: ESC2016-448</td>
<td>Location of micro-seismic events with a systematic grid-search approach</td>
<td>Guidarelli, Mariangela; Klin, Peter; Grigoli, Francesco; Priolo, Enrico</td>
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<td>12-21: ESC2016-202</td>
<td>Influence of induced seismicity on seismic hazard in the Urals, Russia</td>
<td>Ruslan, Dyagilev</td>
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<td>12-22: ESC2016-553</td>
<td>Abedeto - a tool to constrain event depth by depth phase modelling and visualization</td>
<td>Kriegerowski, Marius; Cesca, Simone; Heimann, Sebastian; Dahm, Torsten</td>
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<td>12-23: ESC2016-317</td>
<td>High resolution 3D imaging of the Irpinia active fault zone part 2: Modeling of rock physical properties</td>
<td>De Landro, Grazia; Amoroso, Ortensia; Russo, Guido; Zollo, Aldo; Garambois, Stephane; Mazzoli, Stefano; Parente, Mariano; Virieux, Jean</td>
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<td>12-24: ESC2016-403</td>
<td>Seismic hazard from natural and induced seismicity: a comparison for Italy</td>
<td>Mucciarelli, Marco; Priolo, Enrico; Santulin, Marco; Tamaro, Alberto</td>
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09:00–10:30

Inge Lehmann Distinguished Award Lecture

Lecture Room: Saturnia

Chairperson: Wolfgang A. Lenhardt

BARBARA ROMANOWICZ: Global imaging of the Earth’s mantle in the era of numerical waveform computations

11:30–13:00

01 Advances in noninvasive approaches to characterizing seismic site conditions (joint ESC-SSA session)

Conveners: Alan Yong; Dario Albarello; John Cassidy; Sebastiano D’Amico

Lecture Room: Oceania C

11:45–12:00: ESC2016-252
Comparison of SPAC methodologies and results for a microtremor survey over deep soft sediments, Christchurch, New Zealand

Asten, Michael

12:00–12:15: ESC2016-635
Dispersion characteristics of surface waves inferred from 2D noise array measurements: time stability, noise sources azimuthal distribution and environmental effects

Oghalaei, Kaveh; Guillier, Bertrand; Cornou, Cécile

12:15–12:30: ESC2016-132
Retrieval of Rayleigh Wave Ellipticity from Ambient Vibrations Recordings

Maranò, Stefano; Hobiger, Manuel; Fäh, Donat

12:30–12:45: ESC2016-574
Effects of Poisson Ratio and Density Values on VS Profiles and VS30 Derived from Noninvasive Geophysical Techniques

Yong, Alan; Boatwright, John; Martin, Antony

12:45–13:00: ESC2016-107
Shear-wave velocities to depths greater than 1 km using the krSPAC microtremor array method: examples from Seattle, Washington and Charleston, South Carolina, USA

Stephenson, William; Odum, Jackson; Asten, Michael

END OF ORAL PROGRAM 01

11:30–13:00

12 Induced and triggered seismicity: Mechanisms, monitoring, discrimination and management strategies

Conveners: Francesco Grigoli; Enrico Caffagni; Götz Bokelmann; Simone Cesca; Wolfgang Lenhardt; Beata Orlecka-Sikora; Enrico Priolo

Lecture Room: Saturnia

11:30–12:00: ESC2016-698
Statistic bounds for magnitudes of induced and triggered seismicity (invited talk)

Shapiro, Serge A.

12:00–12:15: ESC2016-338
How well can we explain reservoir-induced seismicity by mean of simplified semi-analytical models? Use of a combined poroelastic and earthquake nucleation approach applied to the Val d’Agri (Italy)

Caffagni, Flaminia; Hainzl, Sebastian; Rinaldi, Antonio Pio; Urpi, Luca; Improma, Luigi; Dahm, Torsten

12:15–12:30: ESC2016-352
Effects on non-structural elements by induced seismicity

Barone, Stefano; Borzi, Barbara

12:30–12:45: ESC2016-414
The SIR-MIUR project INSIEME: preliminary results of the first year of activities

Stabile, Tony Alfredo and the INSIEME Team

12:45–13:00: ESC2016-436
The Matched Filtering Algorithm (MFA): Extending the potential for detection and location of microseismic events. Hints for induced seismicity hazard?

Caffagni, Enrico; Eaton, David; Jones, Joshua; van der Baan, Mirko

14:30–17:15

14:30–14:45: ESC2016-437
Induced Seismicity connections: from hydraulic fracturing to knowledge gaps, regulations, and mitigation strategy

Caffagni, Enrico; Bokelmann, Goetz; Lenhardt, Wolfgang; Joswig, Manfred; Sauter, Martin

14:45–15:00: ESC2016-441
Vp/Vs variations within the fault plane - tracking the fluids

Bachura, Martin; Fischer, Tomáš

15:00–15:15: ESC2016-461
On the seismicity recorded in the geothermal area of Mt. Amiata

Braun, Thomas; Caciagli, Marco; Dahm, Torsten; Famiani, Daniela;Gattuso, Alessandro; Krueger, Frank; Ohrnberger, Matthias

15:15–15:30: ESC2016-515
Modeling of poroelastic and hydraulic response of a seasonally loaded water reservoir and implications for Reservoir-Induced Seismicity

Urpi, Luca; Rinaldi, Antonio P.; Catalli, Flaminia; Buttinelli, Mauro; Improma, Luigi
15:30–15:45: ESC2016-524
Probabilistic seismic hazard assessment for the Collalto area (Northern Italy); preliminary results based on natural seismicity observations
Gee, Robin; Peruzzi, Laura; Pagani, Marco; Romano, Maria Adelaide; Priolo, Enrico

15:45–16:00: ESC2016-542
Anatomy of 2013 Galati seismic swarm in southeastern Romania - implications for understanding the triggering mechanism
Poiata, Natalia; Tataru, Dragos; Grecu, Bogdan; Radulian, Mircea; Popa, Mihaela

16:00–16:15: ESC2016-595
Volcanic tremor mechanisms constrained through field and laboratory comparisons
Cauchie, Léna; Bean, Chris; Benson, Philip; Rowley, Peter; Fazio, Marco; McCann, Hannah

16:15–16:30: ESC2016-600
Seismicity monitoring at the Izvorul Munteleu dam (Eastern Carpathians Romania) using multiple approaches
Borleanu, Felix; Placinta, Anca Otilia; Popa, Mihaela; Moldovan, Iren Adelin; Popescu, Emilia

16:30–16:45: ESC2016-640
The impact of seismogenic faulting on gas reservoirs: case-histories from northern and central Italy
Mucciarelli, Marco; Donda, Federica; Valensise, Gianluca

16:45–17:00: ESC2016-668
Effective stress drop as a possible tool for assessing stress drop of earthquake clusters
Fischer, Tomáš; Hainzl, Sebastian

17:00–17:15: ESC2016-684
A procedure to simulate the likely evolution of induced seismicity and maximum magnitudes, during well stimulation
Troise, Claudia; De Natale, Giuseppe; Carlino, Stefano; Somma, Renato; Massarotti, Nicola

17:15–17:30: ESC2016-713
Research on Oil and Gas-Related Induced Seismicity at Natural Resources Canada
Kao, Hoon; Lamontagne, Maurice; Lavoie, Denis; Cassidy, John F.

17:30–17:45: ESC2016-523
Spatial and temporal distribution of volcano-induced seismicity at Nyiragongo and Nyamulagira volcanoes (Democratic Republic of Congo) using cross-correlation based techniques
Barrière, Julien; Oth, Adrien; d’Oreye, Nicolas; Kervyn, Françoise

END OF ORAL PROGRAM 12
Wednesday – Oral program

11:30–13:00

14 Engineering seismology in the risk evaluation of built environment (Joint ESC-EAEE session)

Conveners: Angelo Masi; Maria Rosaria Gallipoli; Stefano Grimaz; Fabio Romanelli
Lecture Room: Oceania AB

Seismic action and structural response

11:30–11:45: ESC2016-592
Response-Spectrum Compatible Earthquake Record Selection for Nonlinear Structural Analysis
Isbiliroglu, Levent; Lancieri, Maria; Guéguen, Philippe

11:45–12:00: ESC2016-406
A possible seismic design process to overcome the limitations of standard seismic input definition
Magrin, Andrea; Fasan, Marco; Amadio, Claudio; Romanelli, Fabio; Vaccari, Franco; Panza, Giuliano F.

12:00–12:15: ESC2016-222
New charts for rapid and accurate assessment of fundamental periods of concrete or steel buildings
de la Foye, Alexandre; Richard Jarpa, Thomas

12:15–12:30: ESC2016-217
Seismic method for quick assessment of structural health
Antonovskaya, Galina; Kapustian, Natalia

12:30–12:45: ESC2016-181
SPO2FRAG V1.0: software for derivation of seismic fragility functions via static pushover
Iervolino, lunio; Baltzopoulos, Georgios; Vamvatsikos, Dimitrios; Baraschino, Roberto

12:45–13:00: ESC2016-392
Fundamental period elongation of a RC building during the Pollino seismic swarm sequence
Gallipoli, Maria Rosaria; Stabile, Tony Alfredo; Guéguen, Philippe; Mucciarelli, Marco; Comelli, Paolo; Bertoni, Michele

13:00–13:15: ESC2016-371
Seismic action on buildings noise measures: Lalîptur (Kathmandu)
Sandon, Denis; Pettenati, Franco; Maskey, Sumit; Giorgi, Massimo; Cravos, Claudio

Soil-structure interaction at different test sites: An application to Istanbul, Bishkek and Mexico City
Petrovic, Bojana; Parolai, Stefano; Dikmen, S. Umit; Pianese, Giovanna; Paolucci, Roberto; Orunbaev, Sagynbek; Moldobekov, Bolot
15:00–15:15: ESC2016-607
Combining Stockwell Transform and deconvolution interferometry to detect the non-linear response of instrumented buildings during an earthquake
**Pianese, Giovanna;** Petrovic, Bojana; Paolucci, Roberto; Parolai, Stefano

15:15–15:30: ESC2016-405
Application of seismic fragility functions for a post-earthquake bridge inspection protocol in Costa Rica
**Muñoz, Jorge;** Ruiz, Paulo; Moya, Áaron; Schmidt, Victor; Vega, Paul; Vargas, Luis Guillermo; Barrantes, Roy; Loría, Luis Guillermo

15:30–15:45: Discussion

**Seismic risk**

15:45–16:00: ESC2016-336
Uniform risk-targeted maps for Romania
**Vacareanu, Radu;** Pavel, Florin; Coliba, Veronica; Craciun, Ionut

16:00–16:15: ESC2016-370
Investigation on the seismic risk of Bucharest, Romania
**Pavel, Florin;** Vacareanu, Radu

16:15–16:30: ESC2016-237
RINTC - A project to assess the seismic risk of code-conforming structures in Italy
**Ierv, Iu**

16:30–16:45: ESC2016-289
Seismic risk of old RC buildings: vulnerability evaluation at urban scale to define strengthening programs
**Chiauzzi, Leonardo;** Masi, Angelo; Mucciarelli, Marco

16:45–17:00: ESC2016-291
Towards an action plan for the seismic risk mitigation of the residential building stock in Val d’Agri area, Italy
**Masi, Angelo;** Chiauzzi, Leonardo; Mucciarelli, Marco; Digrisolo, Andrea

17:00–17:30: Discussion

**END OF ORAL PROGRAM 14**

11:30–12:45

**22 Historical earthquake research in Europe**

**Conveners:** Andrea Rovida; Christa Hammerl; Ina Cecić
**Lecture Room:** Vulcania 2

**Chairpersons:** Hammerl, Rovida

11:30–11:45: ESC2016-38
Earthquakes between 1350 and 1700 in southern Dalmatia and Montenegro
**Albini, Paolo;** Rovida, Andrea

11:45–12:00: ESC2016-624
Macroseismic information from Ottoman Archives for earthquakes of 19th century in Central-Eastern Turkey
**Sesetyan, Karin;** Sakin, Orhan; **Sonmez, Serpil;** Demircioglu, Mine B.

12:00–12:15: ESC2016-322
Stochastic strong ground motion simulations for the intermediate-depth historical earthquakes
**Kkallas, Harris;** Papazachos, Costas; Boore, David; Margaris, Vasilis

12:15–12:30: ESC2016-264
The 1896 Ljubljana earthquake: can the intensity data points discriminate which one of the nearby faults was the causative one?
**Tiberi, Lara;** Costa, Giovanni; Jamšek Rupnik, Petra; Cecić, Ina; Suhadolc, Peter

12:30–12:45: ESC2016-256
Macroseismic evaluation of Santa Maria island (Azores) 1937 and 1939 earthquakes
**Carmo, Rita;** Ferreira, Teresa; Marques, Rita

14:30–17:45

**Chairpersons:** Cecić, Hammerl

14:30–14:45: ESC2016-661
Seismic Sardinia: the historical earthquakes of an "earthquake-less" island
**Camassi, Romano;** Castelli, Viviana; Meletti, Carlo

14:45–15:00: ESC2016-113
Mycenaean Tiryns and the Earthquake Hypothesis: Summary of Results from the HERACLES Project
**Hinzen, Klaus-G.;** Damm-Meinhardt, Ursula; Fleischer, Claus; Hinojosa-Prieto, Hector; Maran, Joseph; Reamer, Sharon K.; Schwepp, Gregor; Tzisakis, Jana

15:00–15:15: ESC2016-541
A Conceptual Framework for Spatial and Temporal Visualisations of Historical and Recent Earthquake Data
**Ferschin, Peter;** Hammerl, Christa

15:15–15:30: ESC2016-547
The 2015 version of the Italian Parametric Earthquake Catalogue (CPTI15)
**Rovida, Andrea;** Locati, Mario; Camassi, Romano; Lolli, Barbara; Gasperini, Paolo; Azzaro, Raffaele; Bernardini, Filippo; D’Amico, Salvatore; Ecolani, Emanuela; Meletti, Carlo; Rossi, Antonio; Tertulliani, Andrea

15:30–15:45: ESC2016-62
Comparing the annual frequencies of exceedance of observed intensities to those predicted by probabilistic seismic hazard assessments for France
**Rey, Julien; Beauval, Celine;** Douglas, John

15:45–16:00: ESC2016-586
Assessment of earthquake parameters: Limited IDP knowledge could bring to magnitude overestimation.
**Schlupp, Antoine;** Sira, Christophe

16:00–16:15: ESC2016-434
Rectangular Blocks vs Polygonal Walls in Archaeoseismology
**Hinzen, Klaus-G.;** Montabert, Arnaud

16:15–16:30: ESC2016-619
The state-of-the-art of the investigation of 1858 'ilina (Slovakia) earthquake
**Kysel, Robert;** Labak, Peter; Hammerl, Christa
16:30–16:45: ESC2016-666
Finding gaps in the historical earthquake record of Italy: case histories
Bernardini, Filippo; Camassi, Romano; Castelli, Viviana; Ercolani, Emanuela; Caracciolo, Carlos H.; Rossi, Antonio; Tertulliani, Andrea

16:45–17:00: ESC2016-175
Scientific networks and data-exchanges in European seismological research during the 1930s and 1940s.
Lund Jacobsen, Líf

17:00–17:15: ESC2016-660
Retrieving lost earthquakes 3.0
Camassi, Romano; Castelli, Viviana; Azzaro, Raffaele; Bernardini, Filippo; Caracciolo, Carlos H.; Ercolani, Emanuela; Rossi, Antonio; Tertulliani, Andrea

17:15–17:30: ESC2016-609
ASMI, the Italian node of the European Archive of Historical Earthquake Data (AHEAD)
Locati, Mario; Rovida, Andrea

17:30–17:45: Discussion
END OF ORAL PROGRAM 22

14:30–17:30
25 Earthquake seismology applied: what’s needed for managing the many facets of risk

Conveners: Jochen Woessner; Warner Marzocchi
Lecture Room: Oceania C
Chairperson: Jochen Woessner

14:30–15:00: ESC2016-204
Hazard validation of vendor catastrophe models with application to reinsurance (invited talk)
Styles, Kirsty

15:00–15:15: ESC2016-69
Development of an open-data based Reinsurance Catastrophe Model
Ewald, Michael; Karababa, Faye

15:15–15:30: ESC2016-702
The European Seismic Hazard Model 2018: The next generation probabilistic seismic hazard model for Europe (invited talk)
Wiemer, Stefan; Giardini, Domenico; Danciu, Laurentiu; Haslinger, Florian and the ESHM18 Team

15:30–15:45: ESC2016-537
A new PSHA model for Sub-Saharan Africa using OpenQuake and the GEM Modelling Toolkits
Poggi, Valerio; Pagani, Marco; Weatherill, Graeme; Garcia, Julio; Durrheim, Raymond; Mavonga, Georges; Nyblade, Andrew

15:45–16:15: ESC2016-125
Operational earthquake loss forecasting (invited talk)
Iervolino, Iunio

16:15–16:30: ESC2016-157
Evolution of earthquake rupture potential along active faults, inferred from seismicity rates and size distributions
Tormann, Thessa; Wiemer, Stefan; Enescu, Bogdan; Woessner, Jochen

16:30–16:45: ESC2016-301
Large earthquakes in historical and pre-historical times in Switzerland: An overview of earthquake induced effects
Fäh, Donat; Gassner-Stamm, Gabriela; Strasser, Michael; Grolimund, Remo; Wirth, Stephanie

16:45–17:00: ESC2016-318
Revision of Earthquake Hypocenter Locations in Global Bulletin Data Sets using Source-Specific Station Terms Technique
Nooshiri, Nima; Sau, Joachim; Heimann, Sebastian; Tilmann, Frederik; Dahm, Torsten

17:00–17:15: ESC2016-111
GEAR1 forecast: Distribution of largest earthquakes and number test
Kagan, Yan

17:15–17:30: ESC2016-290
Long lasting operational practice in forecasting earthquakes and related ground shaking
Peresan, Antonella; Kossobokov, Vladimir; Panza, Giuliano F.

END OF ORAL PROGRAM 25

19:30–23:00
SE3 Social dinner

Social dinner in restored warehouse
(Pre-registration necessary)
Posters Wednesday

01 Advances in noninvasive approaches to characterizing seismic site conditions (joint ESC-SSA session)

Conveners: Alan Yong; Dario Albarello; John Cassidy; Sebastiano D’Amico
Display Time: Wed, 09:00–19:00
Attendance Times: Wed, 10:30–11:30 & 17:30–19:00

01-1: ESC2016-108
A Multimethod Approach for Acquiring Shear-wave Velocity Data (Vs30) for Seismic Hazard Site Characterization Within the Urban Environment
Odum, Jack; Stephenson, William; Williams, Robert; Volti, Theodora

01-2: ESC2016-147
Discussion on the role of level 1 and 3 Liquefaction microzonation studies for improving seismic resilience of urban areas
Vessia, Giovanna; Rainone, Mario Luigi; Di Domenica, Alessandra; Pizzi, Alberto; Giallini, Silvia; Pagliaroli, Alessandro; Moscatelli, Massimiliano

01-3: ESC2016-161
Application of active and noise-based site characterization methods during seismic microzonation of Budapest, Hungary
Pági, Erzsébet; Grácz, Zoltán; Szanyi, Gyöngyvér; Timkó, Máté

01-4: ESC2016-180
Landslide characterization using ambient seismic noise techniques at Dunaszekcső, Hungary
Szanyi, Gyöngyvér; Finta, Péter; Grácz, Zoltán; Győri, Erzsébet

01-5: ESC2016-231
Site effects assessment along the eastern Enriquillo Plantain Garden Fault Zone in Haiti
Ulysse, Sophie Marie Johanne; Havenith, Hans-Balder; Boisson, Dominique

01-6: ESC2016-308
Investigating ambient noise recordings at lusi mud volcano (indonesia) seismic network
Panzer, Francesco; D’Amico, Sebastiano; Lupi, Matteo; Mazzini, Adriano

01-7: ESC2016-359
Construction of 3D Shear-wave Velocity Model for Ilan Basin, Taiwan, using Microtremor H/V Spectral Ratio Modeling
Lin, Che-Min; Wen, Kuo-Liang; Huang, Jyun-Yan; Fatimah, Siti

01-8: ESC2016-386
Estimation of fundamental frequency peaks, in the Chief City, Algeria, using different methods
Layadi, Khalissa; Semmann, Fethi; Yelles-Chaouche, Abdelkarim

01-9: ESC2016-423
Recent insight into seismic amplification effects and seismically-induced boulder falls at Casentino city site (AQ).
Garzonio, Carlo Alberto; Rainone, Mario Luigi; Vessia, Giovanna

01-10: ESC2016-454
Experimental and numerical site response analysis for the definition of macroseismic anomalies in Liguria, Italy
De Ferrari, Roberto; Ferretti, Gabriele; Barani, Simone; Giacomo, Pepe; Andrea, Cevasco

01-11: ESC2016-476
Preliminary mapping of the Po Plain (Northern Italy) seismic bedrock from passive geophysical surveys and stratigraphic evidence
Mascandola, Claudia; Massa, Marco; Argnani, Andrea

01-12: ESC2016-485
Development and validation of a low-cost three-component recorder for H/V method application
Solera-Llorens, Juan Luis; Galiana-Merino, Juan Jose; Giner-Catufa, Jose Juan; Jauregui-Eslava, Pedro; Rosa-Cintas, Sergio; Rosa-Herranz, Julio

01-13: ESC2016-487
Ambient noise recording and H/V analysis through Arduino Due and Matlab
Galiana-Merino, Juan Jose; Solera-Llorens, Juan Luis; Rosa-Herranz, Julio; Rosa-Cintas, Sergio; Giner-Catufa, Jose Juan; Jauregui-Eslava, Pedro

01-14: ESC2016-521
The use of HVSR measurements for investigating buried tectonic structures: the Miranda Anticline, northern Italy, as a case study
Tarabusi, Gabriele; Caputo, Riccardo

01-15: ESC2016-561
Seismic attenuation of the clays of the west part of Mexico Valley Basin
Nava, Janeri; Rodríguez, Miguel; Ovando, Efrain

01-16: ESC2016-570
Gradient-based shear-wave velocity parameterization in Bayesian inversion of surface-wave dispersion for earthquake site response
Gosselin, Jeremy; Dossou, Stan; Cassidy, John; Quijano, Jorge; Molnar, Sheri

01-17: ESC2016-649
Ambient vibration analysis as a proxy for the detection of buried geological structures
Famiani, Daniela; Cara, Fabrizio; Di Giuliani, Giuseppe; Hailenikael, Salomon; Vassallo, Maurizio; Amoroso, Sara; Cantore, Luciana; Di Naccio, Deborah; Mercuri, Alessia; Milana, Giuliano

01-18: ESC2016-663
HV-Inv: a tool for forward calculation of the HVSR and inversion of Vs structures under the diffuse field assumption
García-Jerez, Antonio; Piña-Flores, José; Sánchez-Sesma, Francisco; Luzón, Francisco; Pertin, Mathieu; Seivane, Helena; Navarro, Manuel
13 From active faulting and geodynamic data to the assessment of seismic hazard: new constraints and challenges ahead

Conveners: Vanja Kastelic; Kurt Decker; Katalin Gribovszki; Andrea Hampel; Erika Hegymegi; Antonella Peresan; Karin Sesetyan; Gianluca Valensise
Display Times: Tue, 09:00–19:00 & Wed, 09:00–19:00
Attendance Times: Tue, 10:30–11:30 & 17:30–19:00
Wed, 10:30–11:30 & 17:30–19:00
Chairpersons: Kastelic, Decker, Gribovszki, Hegymegi, Peresan, Valensise

13-1: ESC2016-51
Stress change and fault interaction from a two century-long earthquake sequence in the central Tell Atlas (Algeria)
Kariche, Jugertha; Meghraoui, Mustapha; Ayadi, Abdelhakim; Ziyadin, Cakir;
Boughacha, Mohamed Salah

13-2: ESC2016-309
Investigation of the possible tectonic fault in the Little Carpathians Mts. using combination of geophysical methods
Fojtikova, Lucia; Kristekova, Miriam; Madaras, Jan; Malek, Jiri

13-3: ESC2016-471
Geophysical survey to study active and capable faults in Friuli Venezia Giulia: the example of the Maniago thrust (Meduno, NE Italy)
Polí, Maria Eliana; Affatato, Alessandro; Baradello, Luca; Bohm, Guatiero; Dal Bo, Igor; Del Pin, Enrico; Forte, Emanuele; Grimaz, Stefano; Massolino, Giulia

13-4: ESC2016-314
The Maniago thrust: an active and capable fault at the front of the eastern Southern Alps (NE Italy). Implication for the seismic hazard assessment in Friuli
Polí, Maria Eliana; Falcucci, Emanuela; Gori, Stefano; Marchesini, Andrea; Monegato, Giovanni; Zanferrari, Adriano

13-5: ESC2016-447
New statistics of earthquake-fault dip angles
Basili, Roberto; Tiberti, Mara Monica

13-6: ESC2016-496
Faults geometry and rupture evolution of the May 2012 Emilia (Northern Italy) earthquakes: hints from high precise relocated hypocenters and coseismic deformation
Massa, Marco; Carannante, Simona; Argnani, Andrea; Pezzo, Giuseppe

13-7: ESC2016-420
Active fault and finite element geodynamic models for PSHA
Kastelic, Vanja; Carafa, Michele M.C.; Visini, Francesco

13-8: ESC2016-480
Fault-plane solutions and stress orientation in the greater region of Northern and Central Dinarides
Herak, Marijan; Herak, Davorka; Dasović, Iva

13-9: ESC2016-572
Deformation and fault slip rates for Africa-Iberia plate boundary, determined by neotectonic modeling
Neres, Marta; Carafa, Michele; Fernandes, Rui; Matias, Luis; Duarte, João C.; Barba, Salvatore; Terrinha, Pedro

13-10: ESC2016-279
Infering on the seismogenesis of the Sannio-Irpinia border region (Southern Italy).
De Matteo, Ada; Massa, Bruno; Milano, Girolamo; D'Auria, Luca

13-11: ESC2016-209
Earthquakes and seismogenic sources in the Trentino region (central-eastern Alps, Italy)
Viganò, Alfio; Scafidi, Davide; Ranalli, Giorgio; Martin, Silvana; Della Vedova, Bruno; Spallarossa, Daniele; Franceschini, Andrea; Zambotto, Mauro

13-12: ESC2016-278
Present-day seismicity in and around the Matese Massif (Southern Apennines, Italy): inferring on the seismic hazard evaluation.
Milano, Girolamo

13-13: ESC2016-48
Investigation of the April 2013 destructive earthquake in Makran subduction zone, southeast Iran
Heidar, Ramak; Sedghi, Maryam; Gheiltanchi, Mohammad Reza

13-14: ESC2016-463
Three-dimensional crustal structure in the western part of Romania from local earthquake data
Zaharia, Bogdan; Grecu, Bogdan; Popa, Mihaela; Oros, Eugen; Radulian, Mircea
13-15: ESC2016-47
Seismicity of the Bushehr region with emphasis on the destructive earthquake of 2013, Kaki, in Zagros, southwest Iran
Sedghi, Maryam; Heidari, Ramak; Heidari, Hamid; Moshiri, Maryam; Jazayeri, Abbas

13-16: ESC2016-356
Shear-wave velocity structure and geodynamics in Balkan Peninsula region
Protopopova, Valentina; Raykova, Reneta

13-17: ESC2016-630
Determining the Kaki Earthquake properties with using InSAR Method, 2013, Kaki, southwest Iran
Heidari, Ramak; Sedghi, Maryam

13-18: ESC2016-648
Non-destructive speleothem investigation for paleoearthquake records
Hegymegi, Erika; Gribovszki, Katalin; Gyöngy, Miklós; Bokelmann, Götz; Hegymegi, Csaba

13-19: ESC2016-642
Constraints on Long-Term Seismic Hazard From Vulnerable Stalagmites
Gribovszki, Katalin; Esterhazy, Sofi; Bokelmann, Götz; Mónus, Péter; Kovács, Károly; Konéncy, Pavel; Lednicka, Marketa; Spölt, Christoph; Bednárik, Martin; Brimich, Ladislav; Hegymegi, Erika

13-20: ESC2016-103
Seismic Hazard and Risk Assessment (SHandRA): the Greater Caucasus and Crimea
Kossobokov, Vladimir; Nekrasova, Anastasia

END OF POSTER PROGRAM 13

14 Engineering seismology in the risk evaluation of built environment (Joint ESC-EAAE session)

Conveners: Angelo Masi; Maria Rosaria Gallipoli; Stefano Griraz; Fabio Romanelli
Display Times: Tue, 09:00–19:00 & Wed, 09:00–19:00
Attendance Times: Tue, 10:30–11:30 & 17:30–19:00
Wed, 10:30–11:30 & 17:30–19:00

14-1: ESC2016-269
Scenario events in central Italy for seismic response analysis: the case study of the Fucino plane
D’Amico, Maria; Pacor, Francesca; Milana, Giuliano; Boncio, Paolo; Famiani, Daniela; Pace, Bruno; Cultreria, Giovanna

14-2: ESC2016-155
Seismic risk in Chisinau, Moldova
Alcaz, Vasile; Iscico, Eugen; Ghibsari, Victoria; Troian, Sergiu

14-3: ESC2016-353
Analysis of the effect of air temperature on the building response: observation and numerical modeling
Gueguen, Philippe

14-4: ESC2016-85
A study on fragility analyses of masonry buildings in Erzincan (Turkey) utilizing simulated and real ground motion records
Karimzadeh naghshineh, Shaghayegh; Kadas, Koray; Askan, Aysegul; Erberik, Murat Allug; Yakut, Ahmet

14-5: ESC2016-363
Correlation between seismic intensity measures and structural performances of non-ductile and code conforming RC buildings in Italy
Masi, Angelo; Manfredi, Vincenzo; Disgrisolo, Andrea

14-6: ESC2016-307
Seismic response of a reinforced concrete building: comparison between earthquakes, induced vibrations, and numerical modelling
Barnaba, Carla; Fabris, Davide; Lostuzzo, Riccardo

14-7: ESC2016-591
Ambient vibration measures on strategic buildings in Matera in the framework of the CLARA-Smart Cities project
Massolino, Giulia; Sandron, Denis; Gallipoli, Maria Rosaria; Rebez, Alessandro; Mucciarelli, Marco; Stabile, Tony Alfredo

14-8: ESC2016-603
Changes in Vibration Periods of the TAIPEI 101 Skyscraper during Typhoon Soudelor in 2015
Chen, Kou-Cheng; Wang, Jeen-Hwa; Huang, Bor-Shouh

14-9: ESC2016-610
From ambient vibrations to damage assessment at urban scale: a numerical study and application to Beirut city (Lebanon)
Salameh, Christelle; Bard, Pierre-Yves; Guillier, Bertrand; Harb, Jacques; Cornou, Cécile; Al Makari, Michelle

END OF POSTER PROGRAM 14

22 Historical earthquake research in Europe

Conveners: Andrea Rovida; Christa Hammerl; Ina Cecić
Display Time: Wed, 09:00–19:00
Attendance Time: Wed, 10:30–11:30 & 17:30–19:00
Chairpersons: Rovida, Hammerl, Cecić

10:30–10:45: Opening of the session: brief poster summary presentations

22-1: ESC2016-402
Earthquake catalogue for southwestern Germany – A status report
Brunner, Wolfgang; Hock, Silke; Braumann, Uwe; Rodler, Fee-Alexandra; Greve, Andreas

22-2: ESC2016-612
Reassessment of macroseismic data for eight historical earthquakes in the region of Hrvatsko primorje and Mt. Velebit
Herak, Davorka; Sović, Ivica; Herak, Marijan
22-3: ESC2016-582
A little known archive of historical earthquakes in Greece for the period 1893-1915
Papadopoulos, Gerassimos

22-4: ESC2016-395
Image processing in macroseismology: use of the image moments analysis for the comparison of isoseismal maps
Sović, Ivica; Šarić, Kristina; Tasić, Tanasko

22-5: ESC2016-647
Studying the Geophysical and Geological Environment of Earthquakes Using Geographic Information System Tools
Gribovszki, Katalin; Szeidovitz, Győző; Bokelmann, Götz; Mónus, Péter; Kovács, Károly; Kalmár, János

22-6: ESC2016-449
Re-evaluation and comparison of macroseismic effects for the major earthquakes occurred at the beginning of the 19th century in the Vrancea region, Romania
Rogozea, Maria; Radulian, Mircea; Toma-Danila, Dragos

22-7: ESC2016-695
Two potential cases of earthquake-induced old landslides in Vrancea seismic region (Romania)
Micu, Mihai; Havenith, Hans Balder; Balteanu, Dan; Onaca, Alexandru; Cioflan, Carmen; Mreyen, Anne-Sophie

END OF POSTER PROGRAM 22

25 Earthquake seismology applied:
what’s needed for managing the many facets of risk

Conveners: Jochen Woessner; Warner Marzocchi
Display Time: Wed, 09:00–19:00
Attendance Time: Wed, 10:30–11:30 & 17:30–19:00
Chairperson: Jochen Woessner

25-1: ESC2016-65
How long time will we go with so many uncertainties in evaluation of hazard and seismic risk?
Marmureanu, Gheorghe; Cioflan, Carmen; Marmureanu, Alexandru; Ionescu, Constantin; Manea, Florinela

25-2: ESC2016-84
Preparation of the unified earthquake catalogue for the Western Balkan Region
Markušić, Snjezana; Gülerce, Zeynep; Kuka, Neki; Duni, Llambro; Ivančić, Ines; Mihaljević, Jadranka; Kovačević, Svetlana; Šalić, Radmila; Milutinović, Zoran; Radovanović, Slavica; Glavatović, Branislav

25-4: ESC2016-71
Influence of Seismic Hazard Model Components on typical risk metrics: Examples from South-East Asian Countries
Woessner, Jochen; Seyhan, Emel; Nyst, Marleen

25-5: ESC2016-585
Building a new PSHA earthquake source model for South America: the SARA model
García, Julio; Weatherill, Graeme; Pagani, Marco; Rodriguez, Luis; Poggi, Valero

END OF POSTER PROGRAM 25
Keynote Lectures

Lecture Room: Saturnia

Chairperson: Stefano Parolai

WILLIAM L. ELLSWORTH: Managing the hazard of induced earthquakes in a changing world

and

RICO PRIOLO: Natural, triggered, or induced? An Italian/European perspective on the theme of monitoring and discrimination of induced seismicity

11:30–13:00

02 From ORFEUS to EPOS: the development of European seismological research research infrastructures - a tribute to Torild van Eck

Convener: Florian Haslinger; Alberto Michelini; Rémy Bosssu; Andreas Rietbrock

Lecture Room: Oceania C

Chairperson: Andreas Rietbrock

11:30–12:00: ESC2016-701

EPOS: from conception to implementation (invited talk)

Cocco, Massimo

12:00–12:15: ESC2016-451

Developing sustainable and relevant community services for Seismology in Europe under the EPOS umbrella

Haslinger, Florian; Bossu, Rémy; Danciu, Laurentiu; Dupont, Aurélien; Garth, Tom; Luzi, Lucia; Michelini, Alberto; Rietbrock, Andreas; Sleeman, Reinoud; Strollo, Angelo; Wiemer, Stefan; Consortium, EPOS-Seismology

12:15–12:30: ESC2016-558

From the ORFEUS centralized archive to the EIDA distributed data centre

Strollo, Angelo; Sleeman, Reinoud; Trani, Luca; Clinton, John; Stammeler, Klaus; Danecek, Peter; Pedersen, Helle; Ionescu, Constantin; Pinar, Ali; Evangelidis, Christos

12:30–12:45: ESC2016-287

RAF, the first Italian digital time-synchronized accelerometric network: its evolution and integration into transnational and European research infrastructures

Costa, Giovanni; Suhadolci, Peter

12:45–13:00: ESC2016-56

The ISC Data Products and Services in Europe

Storchak, Dmitry; Di Giacomo, Domenico; Harris, James

14:30–17:00

Chairperson: Florian Haslinger

14:30–14:45: ESC2016-176

Automatic processing of seismograms using the new version of the RSNI-Picker software: examples of real-time and off-line analyses

Scafidi, Davide; Ferretti, Gabriele; Spallarossa, Daniele; Viganò, Alfio

14:45–15:00: ESC2016-258

Amplitude-dependent station magnitude

Radzyner, Yaël; Ben Horin, Yoachai; Steinberg, David M.

15:00–15:15: ESC2016-335

Efficient discovery and access to seismological waveform data in ORFEUS EIDA

Trani, Luca; Koymans, Matthijs; Sleeman, Reinoud

15:15–15:30: ESC2016-123

The Next-Generation Strong-Motion Data Dissemination in the European-Mediterranean Region

Luzi, Lucia; Cauzzi, Carlo; Clinton, John; Kästli, Philipp; Sleeman, Reinoud; Domingo Ballesta, Jordi; Puglia, Rodolfo; Russo, Emiliano; Working Group 5, Orfeus

15:30–15:45: ESC2016-575

Latest developments at GEOFON Data Centre

Quinteros, Javier; Hemmleb, Susanne; Evans, Peter; Heinloo, Andris; Strollo, Angelo

15:45–16:00: ESC2016-644

An update on the INGV National Earthquake Center data products

Danecek, Peter; Pintore, Stefano; Lauciani, Valentino; Fares, Massimo; Quintiliani, Matteo; Bono, Andrea; Marrocchi, Carlo; Margheriti, Lucia; Scognamiglio, Laura; Faenza, Licia; Baccheschi, Paola; Mandiello, Alfonso; Mazza, Salvatore; Michelini, Alberto

16:00–16:15: ESC2016-638

ARISTOTLE: All Risk Integrated System Towards the Holistic Early-Warning

Michelini, Alberto; Wotawa, Gerhard; and the ARISTOTLE Team

16:15–16:30: ESC2016-508

The operational phase of the AlpArray Seismic Network

Clinton, John; Hetenyi, Gyorgy; Molinari, Irene; Kissling, Edi; and the AlpArray Seismic Network Team and EIDA Management Board Team

16:30–16:45: ESC2016-284

High-resolution data and products automatically retrieved from local dense seismological networks: The Alttotberina Near Fault Observatory (Northern Apennines) case study.

Chiaraluce, Lauro; Cattaneo, Marco; Di Stefano, Raffaele; Latorre, Diana; Marzorati, Simone; Monachesi, Giancarlo; Valoroso, Luisa
16:45–17:00: ESC2016-251
KivuSNet: A broadband seismic network for the Lake Kivu & Virunga Volcanic Region, Democratic Republic of the Congo
Oth, Adrien; Barrière, Julien; d’Oreye, Nicolas; Mavonga, Georges; Subira, Jos; Mashaghiro, Niche; Fianna, Silvanos; Birigande, Jean de Dieu; Ntenge, Alain; Kervyn, François

END OF ORAL PROGRAM 02

14:30–17:30

15 Earthquake and multi hazard early warning and rapid response

Conveners: Adrien Oth; Stefano Parolai; Aldo Zollo; Matteo Piccozzi
Lecture Room: Vulcania 1

Chairpersons: Adrien Oth and Matteo Piccozzi

The advancement of new technologies in EEW

14:30–14:45: ESC2016-383
Introducing a free and open-source earthquake early warning display
Cauzzi, Carlo; Behr, Yannik; Clinton, John; Kastli, Philipp; Elia, Luca; Zollo, Aldo

14:45–15:00: ESC2016-156
Smartphone-Network for Earthquake and Tsunami Early Warning in Chile
Böse, Marei; Brooks, Ben; Barrientos, Sergio; Minson, Sarah; Baez, Juan Carlos; Ericksen, Todd; Guillemet, Chris; Duncan, Chris; Sanchez, Rodrigo; Smith, Deborah; Cochran, Elizabeth; Murray, Jessica; Glennie, Craig; Langbein, John; Dueitt, Jerry; Clinton, John

15:00–15:15: ESC2016-61
A Comparison study on the infrastructure of national seismic networks considering earthquake early warning
Kuyuk, H. Serdar

15:15–15:30: ESC2016-342
ALERTEs: An Earthquake Early Warning System for the Ibero-Maghrebian region
Buforn, Elisa; Pazos, Antonio; Roca, Antoni; Carranza, Marta; Martín Dávila, José; Zollo, Aldo; López, Mireia; and the ALERTEs Team

New methodological directions in regional and onsite EEW systems

15:30–15:45: ESC2016-259
Real-time estimation of energy magnitude for EEW purposes
Piccozzi, Matteo; Brondi, Piero; Bindi, Dino; Di Giacomo, Domenico; Parolai, Stefano; Zollo, Aldo

15:45–16:00: ESC2016-413
An Attempt of Predicting the Macroseismic Intensity from Early Radiated Energy for On-site Earthquake Early Warning in Italy
Brondi, Piero; Piccozzi, Matteo; Emolo, Antonio; Zollo, Aldo; Mucciarelli, Marco

16:00–16:15: ESC2016-415
On-site earthquake early warning strategy for Italy
Caruso, Alessandro; Colombelli, Simona; Zollo, Aldo; Brondi, Piero; Elia, Luca; Emolo, Antonio; Festa, Getano; Martino, Claudio; Piccozzi, Matteo

16:15–16:30: ESC2016-316
Initial P-wave amplitude evolution for the 2008, Iwate-Miyagi (Japan) earthquake sequence
Colombelli, Simona; Festa, Gaetano; Zollo, Aldo

Innovative strategies for ground motion prediction and damage mapping in EEW

16:30–16:45: ESC2016-74
Ground motion forecasting using a reference station and complex site response functions accounting for the shallow geology
Pilz, Marco; Parolai, Stefano

16:45–17:00: ESC2016-367
Innovative methodologies for earthquake damage mapping; the APHORISM outcomes
Bignami, Christian; Pierdicca, Nazzareno; Stra mondo, Salvatore; Anniballe, Roberta; Noto, Fabrizio; Giovinazzi, Sonia; Romaniello, Vito; Piscini, Alessandro

Engineering EEW applications

17:00–17:15: ESC2016-628
EEW Significance of Predicting the Generation and Arrival Times of Long Period Seismic Waves in Istanbul Metropolitan Area, NW Turkey
Pinar, Ali; Comoglu, Mustafa; Kalkan Ertan, Esra; Safak, Erdal; Dikmen, S. Umit; Erdik, Mustafa

17:15–17:30: ESC2016-680
Real-Time Assessment of Building Response for Earthquake Early Warning Applications
Galasso, Carmine; Velazquez Ortiz, Omar

END OF ORAL PROGRAM 15

11:30–13:00

17 Rapid estimation of secondary earthquake effects and their impacts

Conveners: Marco Pilz; Carlo Cauzzi; Tolga Gorum; Hans-Balder Havenith; Stefano Parolai
Lecture Room: Vulcania 2

Chairperson: Marco Pilz

11:30–11:45: ESC2016-13
Dynamic geological-geophysical models of unstable slopes in seismic areas - analysis enhanced by 3D stereo visualisation
Havenith, Hans-Balder

11:45–12:00: ESC2016-164
The role of earthquake triggered and climatic driven landslides in sediment transport and dispersal in an active graben: The case study of 1913 Krathis River landslide event, N. Peloponnese, Greece
Zygouri, Vasiliki; Koukouvelas, Ioannis
12:00–12:15: ESC2016-110
An Update on the Integration of Ground Failure Hazard
and Loss Estimates with USGS Real-Time Earthquake Products
Klose, Ulrich; Polom, Ulrich; Fäh, Donat

12:15–12:30: ESC2016-458
Seismic response of earthquake susceptible rock slopes
Konechnaya, Yana; Waldhauser, Felix; Ottemöller, Lars

12:45–13:00: ESC2016-397
Rapid assessment of the likelihood of
earthquake-induced hazards in Switzerland
Cauzzi, Carlo; Fäh, Donat; Wiemer, Stefan; Wald, David

12:00–12:15: ESC2016-190
Seismological investigation of lithosphere processes in the
European Arctic
Antonovskaya, Galina; Konechnaya, Yana; Basakina, Irina; Schweitzer, Johannes; Fedorov, Andrey

12:30–12:45: ESC2016-580
Storfjorden Earthquake Sequence: 2008-2016
Ottemöller, Lars; Kim, Won-Young; Dallmann, Winfried; Waldhauser, Felix

12:45–13:00: ESC2016-96
The joys and woes of missing seismicity: the case of the
Longyearbyen CO2 Lab
Kuehn, Daniela; Albaric, Julie; Bohlol, Bahman; Braathen, Alvar; Dando, Ben; Goertz-Allmann, Bettina; Harris, Dave; Hillers, Gregor; Langet, Nadège; Polom, Ulrich; Ohrnberger, Matthias; Ruud, Bent Ole; Schmidt, Andreas; Senger, Kim

18 Seismological and structural studies in Polar Regions and the
cryosphere

Conveners: Myrto Pirli; Sergei Lebedev; Peter Voss;
Fabian Walter
Lecture Room: Oceania AB
Chairpersons: Myrto Pirli, Peter Voss

General seismology

11:30–11:45: ESC2016-190
Seismological investigation of lithosphere processes in the
European Arctic
Antonovskaya, Galina; Konechnaya, Yana; Basakina, Irina; Schweitzer, Johannes; Fedorov, Andrey

11:45–12:00: ESC2016-201
Recent earthquakes at Disko Island, Greenland.
Dahl-Jensen, Trine; Voss, Peter H.; Larsen, Tine B.

12:00–12:15: ESC2016-207
New data about small-magnitude earthquakes of the
ultraslow-spreading Gakkel Ridge, Arctic Ocean
Morozov, Alexey; Vaganova, Natalya; Konechnaya, Yana; Antonovskaya, Galina; Fedoreenko, Irina; Mikhailylova, Yana

12:15–12:30: ESC2016-671
A 23 Year Long Seismic Bulletin for the European Arctic
Schweitzer, Johannes; Konechnaya, Yana; Fedorov, Andrey; Gibbons, Steven; Pirli, Myrto

12:30–12:45: ESC2016-580
Storfjorden Earthquake Sequence: 2008-2016
Ottemöller, Lars; Kim, Won-Young; Dallmann, Winfried; Waldhauser, Felix

12:30–12:45: ESC2016-671
The joys and woes of missing seismicity: the case of the
Longyearbyen CO2 Lab
Kuehn, Daniela; Albaric, Julie; Bohlol, Bahman; Braathen, Alvar; Dando, Ben; Goertz-Allmann, Bettina; Harris, Dave; Hillers, Gregor; Langet, Nadège; Polom, Ulrich; Ohrnberger, Matthias; Ruud, Bent Ole; Schmidt, Andreas; Senger, Kim

14:30–14:45: ESC2016-671
Surface wave studies of the Greenland crust using ambient seismic noise (invited talk)
Levshin, Anatoli; Shen, Weisen; Michail, Barmin; Michael, Ritzwoller

15:00–15:15: ESC2016-172
Tomographic model of seismic body-wave anisotropy and
velocity perturbations of the upper mantle beneath
Fennoscandia - Application of a novel code AniTom
Munzarova, Helena; Plomerova, Jaroslava; Kisling, Edi; Vecsey, Ludek; Babuska, Vladislav; and the LAPNET working group Team

15:15–15:30: ESC2016-453
Waveform Tomography of the North Atlantic Region
Celli, Nicolas Luca; Lebedev, Sergei; Schaeffer, Andrew; Gaina, Carmen

15:30–15:45: ESC2016-280
Validation of the 3D Moho depth models by active
seismic 2D models for the High Arctic.
Lebedeva-Ivanova, Nina; Gaina, Carmen; Kashubin, Sergey

Cryoseismology

15:45–16:15: ESC2016-53
Analysis of cold glacier ice with active- and
passive-source seismics (invited talk)
Diez, Anja

16:15–16:30: ESC2016-162
Numerical modelling of iceberg calving and implications in
generated seismic waves
Segeant, Amanda; Yastrebov, Vladislav; Mangeney, Anne; Castelnau, Olivier; Montagner, Jean-Paul; Stutzmann, Eléonore

16:30–16:45: ESC2016-354
Fine structure of repeating cryogenic seismicity near a
shear margin of the Fimbul Ice Shelf, East Antarctica, by
cluster analysis, and implications for the study of ice
sheet dynamics
Pirli, Myrto; Schweitzer, Johannes; Matsuoka, Kenichi

16:45–17:00: ESC2016-242
Glacier-related seismicity of Svalbard
Fedorov, Andrey; Asming, Vladimir; Hannibal, Andrey
17:00–17:15: ESC2016-216
Automatic monitoring of long-term glacier dynamics using single station observations and fuzzy logic classification: a case study from Spitsbergen
Gajek, Wojciech; Trojanowski, Jacek; Malinowski, Michal

17:15–17:30: ESC2016-198
First results of seismo-infrasound monitoring of Svalbard glaciers with new PYR station
Baranov, Sergey; Asming, Vladimir; Fedorov, Andrey; Vinogradov, Anatoly; Vinogradov, Yury

END OF ORAL PROGRAM 18

14:30–17:30
19 Advances in borehole networks, data, and analyses

Conveners: Seyyit Umit Dikmen; Olga-Joan Ktenidou; Bojana Petrovic; Kyriazis Pitilakis
Lecture Room: Vulcania 2

Chairpersons: U.Dikmen, O. Ktenidou, B. Petrovic, K. Pitilakis

14:30–15:00: ESC2016-311
Estimation of shear-wave velocity and quality factor using vertical array data: towards new insights into soil-structure interactions (invited talk)
Parolai, Stefano

15:00–15:30: ESC2016-255
UCSB Borehole Array Monitoring Program (invited talk)
Steidl, Jamison

15:30–15:45: ESC2016-425
Integrated real time Multi-Parameter Borehole sensor system
Guralp, Cansun; Tunc, Suleyman; Ozel, Oguz

15:45–16:00: ESC2016-602
A Study on the site transfer functions of the downhole arrays at Istanbul
Tanircan, Gulum; Dikmen, Umit

16:00–16:15: ESC2016-442
A new method for soil-structure interaction estimation by the deconvolution of vertical array data
Petrovic, Bojana; Parolai, Stefano

16:15–16:30: ESC2016-75
On the relationship between near-surface attenuation and scattering
Pilz, Marco; Fäh, Donat

16:30–16:45: ESC2016-295
On the uncertainty of kappa (κ) estimates in boreholes
Ktenidou, Olga-Joan; Parolai, Stefano; Specht, Sebastian

16:45–17:00: ESC2016-95
Estimation of nonlinear time-dependent soil behavior in strong ground motion (vertical distributions of stresses and strains in soil layers) based on vertical array data
Pavlenko, Olga

17:00–17:15: ESC2016-673
Site effects and non-linear soil behavior study using data from the IONIANET borehole array
Theodoulidis, Nikos; Bard, Pierre-Yves

17:15–17:30: ESC2016-345
In situ nonlinear analysis at boreholes using seismic interferometry by deconvolution and the PGV/Vs30 strain proxy
Guéguen, Philippe; Chandra, Johanes; Bonilla, Fabian; Mecerat, Diego; Lopez-Caballero, Fernando; Gélis, Céline

END OF ORAL PROGRAM 19

11:30–13:00
20 Operational assessment and management of natural and induced seismic risk

Conveners: Massimiliano Pittore; Marc Wieland
Lecture Room: Vulcania 1

Chairperson: M. Pittore

11:30–11:45: ESC2016-45
Seismic evaluation of existing buildings in the northern region of Morocco using the Japanese standard
Cherif, Seif-eddine; Chourak, Mimoun; Abed, Mohamed; Nobuoto, Nojima

11:45–12:00: ESC2016-79
New tools for earthquake risk management in Slovenia
Zupančič, Polona; Šket Motnikar, Barbara; Lutman, Marjana; Cerk, Matej; Banovec, Primož; Weiss, Polona; Klemenc, Iztok

12:00–12:15: ESC2016-97
Mechanics-based earthquake loss scenarios: what benefit and what uncertainties?
Michel, Clotaire; Hannewald, Pia; Lestuzzi, Pierino; Fäh, Donat; Husen, Stephan

12:15–12:30: ESC2016-346
Earthquake loss analysis and cost-benefit exploration for earthquake damage mitigation: evaluating retrofitting investments in France
Riedel, Ismael; Guéguen, Philippe

12:30–12:45: ESC2016-358
Operational assessment of time-varying of seismic vulnerability of reinforced concrete buildings during aftershock sequences based on period elongation
Trevlopoulos, Konstantinos; Guéguen, Philippe

12:45–13:00: ESC2016-578
Constraining seismic risk models by integrating remote sensing and remote rapid visual screening (RRVS): the DESERVE experience
Haas, Michael; Al-Dabbeek, Jalal; Pittore, Massimiliano

END OF ORAL PROGRAM 20
24 FAULT2SHA - a European working group to link faults and probabilistic seismic hazard assessment communities in Europe

Conveners: Oona Scotti; Laura Peruzza
Co-conveners: Bruno Pace; Francesco Visini
Lecture Room: Saturnia

Chairpersons: Scotti, Peruzza

11:30–11:45: Opening, ideas, survey

F2SHA: methods & resources

11:45–12:15: ESC2016-400
Magnitude-Area Scaling and Surface Slip-Length Scaling: Data, Physical Implications, and Application to Seismic Hazard (invited talk)
Shaw, Bruce

12:15–12:30: ESC2016-368
Complexities in Active Fault Characterisation and their Implications for Probabilistic Seismic Hazard Assessment
Weatherill, Graeme; Gee, Robin; Chen, Yen-Shin; Pagani, Marco

12:30–12:45: ESC2016-510
Site-Conditions Proxies, Ground-Motion Variability and Data-Driven GMPEs: Insights from NGA-West 2 and RESORCE Data Sets
Derras, Boumediene; Pierre-Yves, Bard; Fabrice, Cotton

12:45–13:00: ESC2016-709
Effects of Listricity on Probabilistic Seismic Hazard Assessment
Passone, Luca; Mai, P. Martin

13:00–13:15: ESC2016-300
Return periods of large earthquakes and their coefficient of variations constrained with paleoseismological data: examples from central Italy
Benedetti, Lucilla; Tesson, Jim; Pace, Bruno; Visini, Francesco; Peruzza, Laura

Active faulting and earthquakes in the central Alboran Sea
Galindo-Zaldívar, Jesús; Estrada, Ferran; Ercilla, Gemma; Vázquez, Juan Tomás; Azzouz, Omar; d’Acremont, Elia; Sanz de Galdeano, Carlos; Gorini, Christian; Benmakhlof, Mohamed; Alonso, Belén; Chalouan, Ahmed; Gil, Antonio José

13:30–13:45: ESC2016-657
Paleoseismological constraints for fault linkage of strike-slip and normal faults in the Vienna Basin
Hintersberger, Esther; Decker, Kurt; Lomax, Johanna; Fiebig, Markus; Lüthgens, Christopher

13:45–14:00: ESC2016-656
A Quaternary fault database for the Vienna Basin
Decker, Kurt; Hintersberger, Esther

14:00–14:15: ESC2016-67
Joint inversion for shallow crustal discontinuities from high-frequency waveforms of microearthquakes
Hrboucova, Pavla; Vavrycuk, Vaclav

14:15–14:30: ESC2016-114
Yetirmishli, Gurban; Kazimova, Sabina

F2SHA: simulation & modelling

14:30–14:45: ESC2016-652
Characterization of near source effects in ground motion numerical simulations
Del Gaudio, Sergio; Lancieri, Maria; Hok, Sebastien

14:45–15:00: ESC2016-707
An artificial neural network approach to support physics-based generation of broadband earthquake ground motions
Smerzini, Chiara; Gatti, Filippo; Paolucci, Roberto

15:00–15:15: ESC2016-187
Integrating physics-based numerical scenarios into PSHA in large urban areas (invited talk)
Paolucci, Roberto; Stupazzini, Marco; Mazzieri, Ilario; Özcebe, Ali Güney; Smerzini, Chiara; Infantino, Maria

END OF THURSDAY ORAL PROGRAM 24
Posters Thursday

02 From ORFEUS to EPOS: the development of European seismological research research infrastructures - a tribute to Torild van Eck

Conveners: Florian Haslinger; Alberto Michelini; Rémy Bossu; Andreas Rietbrock
Display Time: Thu, 09:00–19:00
Attendance Times: Thu, 10:30–11:30 & 17:30–19:00
Chairperson: Alberto Michelini

02-1: ESC2016-43
The ISC: producing the definitive and the most complete long-term record of the European-Mediterranean seismicity
Korger, Edith; Eve, John; Harris, James; Di Giacomo, Domenico; Storchak, Dmitry A.

02-2: ESC2016-160
From eyewitnesses to macroseismic information services
Landès, Matthieu; Bossu, Rémy; Mazet-Roux, Gilles; Roussel, Frédéric; Steed, Robert

02-3: ESC2016-341
Real-time synergy between seismological institutions to confirm and locate earthquakes: from EMSC's flashsourced detections to the exploitation of GFZ's network of seismic networks thanks to HMB messaging service
Dupont, Aurélien; Heinloo, Andres; Bossu, Rémy; Saul, Joachim; Mazet-Roux, Gilles; Strollo, Angelo; Roussel, Frédéric; Evans, Peter; Quinteros, Javier

02-4: ESC2016-492
The Infrastructure Of URBAN-INCERC (Romania) For Strong Motion Recording
Dragomir, Claudiu Sorin; Craifaleanu, Iolanda Gabriela; Georgescu, Emil Sever; Dobre, Daniela; Cismelaru, Adelin

02-5: ESC2016-494
Re-designing the European Database of Seismogenic Faults (EDSF) for EPOS: IT design, implementation, and use-case perspectives
Tarabusi, Gabriele; Valensise, Gianluca; Basili, Roberto

02-6: ESC2016-677
Constraints on crustal and uppermost mantle structure in the Alpine Region from P-wave polarization analysis
Cristiano, Luigia; Meier, Thomas

02-7: ESC2016-679
Data availability at ORFEUS-EIDA stations
Cristiano, Luigia; Meier, Thomas

END OF POSTER PROGRAM 02

15 Earthquake and multi hazard early warning and rapid response

Conveners: Adrien Oth; Stefano Parolai; Aldo Zollo; Matteo Picozzi
Display Time: Thu, 09:00–19:00
Attendance Time: Thu, 10:30–11:30 & 17:30–19:00
Chairpersons: Stefano Parolai and Aldo Zollo

15-1: ESC2016-260
Landslide induced seismicity: near real-time detection and characterization using regional seismic networks
Manconi, Andrea; Picozzi, Matteo; Coviello, Vello; De Sanctis, Francesca; Elia, Luca

15-2: ESC2016-424
The European Testing Center for source characterization and Earthquake Early Warning: Concepts and Developments
Festa, Gaetano; Elia, Luca; Martino, Claudio; Zollo, Aldo; Clinton, John; Behr, Yannik; Kaestli, Philipp; Massin, Fred

15-3: ESC2016-528
Sources of Latency and Associated Design Trade-offs in Earthquake Early Warning Systems
Devanney, Peter; Easton, David; Faloon, Ashley; Cordahi, Christopher

15-4: ESC2016-417
ALERTES-SC3 and ALERTES-site: an Earthquake Early Warning System for south Iberia
Pazos, Antonio; López Mesa, Mineya; Gallego Carrasco, Javier; Rioja del Río, Carlos; Morgado, Arturo; Martin Davila, José

15-5: ESC2016-500
Rapid identification of rupture and auxiliary planes from focal mechanism data for the 2016 Ecuador and Kumamoto earthquakes
Specht, Sebastian; Cotton, Fabricce; Heidbach, Oliver; Zang, Arno

15-6: ESC2016-99
Preliminary study on far field EEW for high technology facility from long period seismic wave
Huang, JyunYan; Wen, Kuoliang; Lin, CheMin

15-7: ESC2016-102
Site corrected ground motion prediction for EEW system of the NCREE-net in Taiwan
Kuo-Liang, Wen; Jyun-Yen, Huang; Che-Min, Lin; Chiao-Chu, Hsu

15-8: ESC2016-243
Intensity prediction equation and event epicenter determination for Austria
Papi Isaba, Maria del Puy; Jia, Yan; Weginger, Stefan

15-9: ESC2016-115
Project of Near-Real-Time Generation of ShakeMaps and a New Hazard Map in Austria
Jia, Yan; Weginger, Stefan; Papi-Isaba, Maria; Horn, Nikolaus; Hausmann, Helmut; Lenhardt, Wolfgang
15-10: ESC2016-253
The Algerian Digital Seismic Network (ADSN): towards an earthquake early-warning system
Ouakedi, Mohamed; Yelles-Chaouche, Abdelkarim; Debbagh, Hamza; Alil, Azouaou; Larbes, Yahia

15-11: ESC2016-431
Real-time earthquake monitoring for Tsunami Warning System in Petropavlovsk-Kamchatsky (Russian Far East) during 2011-2015
Chebrov, Victor N.; Chebrov, Danila V.; Skorkina, Anna A.; Droznin, Dmitry V.; Ototuk, Dmitry A.

15-12: ESC2016-584
Tsunami early warning and evacuation mapping with GIS methods: the case of Heraklion city, Crete Isl., Greece
Triantafyllou, Ioanna; Fokaefs, Anna; Novikova, Tatyana; Papadopoulos, Gerassimos

END OF POSTER PROGRAM 15

17 Rapid estimation of secondary earthquake effects and their impacts

Conveners: Marco Pilz; Carlo Cauzzi; Tolga Gorum; Hans-Balder Havenith; Stefano Parolai
Display Time: Thu, 09:00–19:00
Attendance Times: Thu, 10:30–11:30 & 17:30–19:00
Chairperson: Marco Pilz

17-1: ESC2016-460
Numerical modeling of seismic response of unstable rock slopes
Burjanek, Jan; Kleinbrod, Ulrike; Fäh, Donat

17-2: ESC2016-627
Seventy years of inflation and enlargement of climatically and earthquake triggered rock-slopes and taluses: the case of the Skolis Mountain, North Peloponnese, Greece
Koukouvelas, Ioannis; Litoseliti, Aspasia; Zygouri, Vasiliki; Nikolakopoulos, Konstantinos

17-3: ESC2016-503
Landslides triggered by the 2016 Kumamoto earthquake sequence: role of ground-motion directionality
Specht, Sebastian; Ozturk, Ugur; Veh, Georg; Cotton, Fabrice; Korup, Oliver

END OF POSTER PROGRAM 17

18 Seismological and structural studies in Polar Regions and the cryosphere

Conveners: Myrto Pirli; Sergei Lebedev; Peter Voss; Fabian Walter
Display Time: Thu, 09:00–19:00
Attendance Time: Thu, 10:30–11:30 & 17:30–19:00
Chairperson: Myrto Pirli

18-1: ESC2016-197
Iceberg tracking along the Dronning Maud Land coastline, Antarctica, with seismic stations at regional distances
Pirli, Myrto; Matsuoka, Kenichi; Schweitzer, Johannes; Moholdt, Geir

18-2: ESC2016-428
Local ice stream dynamics inferred from monitoring icequake activity in the eastern Dronning Maud Land, East-Antarctica
Lombardi, Denis; Benoit, Lionel; Camelbeeck, Thierry; Poiata, Natalia; Martin, Olivier; Meynard, Christophe; Thom, Christian

18-3: ESC2016-218
Permanent and temporary seismology at Neumayer III, Antarctica
Fromm, Tanja; Eckstaller, Alfonso

18-4: ESC2016-235
ASAINT - Antarctic Seismological Network
Plasencia Linares, Milton P.; Cravos, Claudio; Rusi, Marino

18-5: ESC2016-422
INGV seismological activities in the Antarctic region
Salimbeni, Simone; Danesi, Stefania; Pondrelli, Silvia; Demartin, Martina; Morelli, Andrea; Delladio, Alberto

18-6: ESC2016-421
Seismic and satellite observations of calving activity at major glacier fronts in Greenland
Salimbeni, Simone; Danesi, Stefania; Urbini, Stefano; Pondrelli, Silvia; Margheriti, Lucia

18-7: ESC2016-158
Quantification of Glacier Frontal Ablation through Passive Seismic Monitoring at Kronebreen, Svalbard
Köhler, Andreas; Nuth, Christopher; Schweitzer, Johannes; Buscaino, Giusi; Weidle, Christian

18-8: ESC2016-373
System for automatic detection and location of seismic events for arbitrary seismic station configuration NSDL
Asming, Vladimir; Prokudina, Angelika
18-9: ESC2016-220
Earthquakes in Greenland - a review
Voss, Peter H.; Larsen, Tine B.; Dahl-Jensen, Trine

18-10: ESC2016-384
M5 Earthquake of 29.03.2016 in Storefjorden strait, Svalbard
Vinogradov, Anatoly; Baranov, Sergey; Asming, Vladimir; Fedorov, Andrey

18-11: ESC2016-89
Seismotectonic deformations of the crust in the Arctic sector of the border between the Eurasian and North American plates
Imaeva, Ludmila; Imaev, Valeriy; Melnikova, Valentina; Seredkina, Alena

18-12: ESC2016-92
Deep velocity structure and anisotropic properties of the upper mantle in Central Asia
Seredkina, Alena; Kozhevnikov, Vladimir; Solovey, Oksana

18-13: ESC2016-313
Complex study of seismicity and Earth’s structure on Livingston Island and surroundings
Dimitrova, Liliya; Georgieva, Gergana; Raykova, Reneta; Dimitrov, Dimitar; Gurev, Vasili; Georgiev, Ivan; Raykova, Plamena; Aleksandrova, Irena; Protopopova, Valentina; Popova, Maria; Solakov, Dimcho; Simeonova, Stela

18-14: ESC2016-433
GoNorth - A new initiative for High Arctic research
Gaina, Carmen; Mjelde, Rolf; Lebedeva-Ivanova, Nina; Sand, Gunnar; Schweitzer, Johannes; Shulgin, Alexey

18-15: ESC2016-567
4D Arctic: Structure and Evolution of Arctic Crust and Mantle Based on Multi-Scale Geophysical Studies - results from an international, multi-disciplinary project
Gaina, Carmen; Lebedeva-Ivanova, Nina; Minakov, Alexander; Nikishin, Anatoly; Faleide, Jan Inge; Schweitzer, Johannes; Struijk, Maartje; Tesuuro, Magdala; Cefli, Nicolas; Lebedev, Sergei; Jakovlev, Andrei

19 Advances in borehole networks, data, and analyses
Conveners: Seyyit Umit Dikmen; Olga-Joan Ktenidou; Bojana Petrovic; Kyriazis Pilitakis
Display Time: Thu, 09:00–19:00
Attendance Time: Thu, 10:30–11:30 & 17:30–19:00

19-1: ESC2016-117
Inversion of P-wave traveltimes from a VSP experiment in moderately anisotropic media
Ruzek, Bohuslav; Psencik, Ivan

19-2: ESC2016-189
Traffic induced seismic noise recorded at vertical and horizontal arrays
Dikmen, S. Umit; Pinar, Ali; Alcik, Hakan

19-3: ESC2016-379
1,256 meters inside the earth - observations of seismic activity in the Dead Sea basin using borehole seismometer
Hofstetter, Rami; Malin, Peter; Ben-Avraham, Zvi; Sagy, Amir; Shalev, Eyal

19-4: ESC2016-432
Prediction of soil factor, S, based on field investigations and empirical correlations
Arion, Cristian; Neagu, Cristian; Calaraasu, Elena

19-5: ESC2016-477
Site response evaluations through vertical arrays in Istanbul
Fercan, Ozge; Kurtuluş, Aslı; Ansal, Atilla; Safak, Erdal

19-6: ESC2016-497
Enhanced seismograms from borehole arrays
Ruigrok, Elmer; Paulssen, Hanneke; Dost, Bernard

END OF POSTER PROGRAM 19

20 Operational assessment and management of natural and induced seismic risk
Conveners: Massimiliano Pittore; Marc Wieland
Display Time: Thu, 09:00–19:00
Attendance Time: Thu, 10:30–11:30 & 17:30–19:00
Chairperson: M. Wieland

20-1: ESC2016-337
The rating of large dams situated on Bistrita and Siret Rivers (Romania) in seismic risk classes
Moldovan, Iren Adelin; Toma-Danila, Dragoș; Constantin, Angela Petruta; Placinta, Anica Otilia; Popescu, Emilia; Borleanu, Felix; Toader, Victorin Emil; Moldoveanu, Traian

20-2: ESC2016-531
A stress-test framework for evaluating the impact of low probability, extreme natural hazards on critical European transport infrastructure networks: The INFRARISK project
Jiménez, María José; O’ Brien, Eugene; and the INFRARISK Consortium Team

END OF POSTER PROGRAM 20
24 FAULT2SHA - a European working group to link faults and probabilistic seismic hazard assessment communities in Europe

**Conveners:** Oona Scotti; Laura Peruzza  
**Co-conveners:** Bruno Pace; Francesco Visini  
**Display Time:** Thu, 09:00–19:00 & Fri, 09:00–19:00  
**Attendance Time:** Thu, 10:30–11:30 & 17:30–19:00  
**Fri, 10:30–11:30**  
**Chairpersons:** Visini, Peruzza

24-1: ESC2016-606  
Fifteen years of loyal service to the seismic hazard community: the Database of Individual Seismogenic Sources, data and architecture  
**Fracassi, Umberto:** Basili, Roberto; Burrato, Pierfrancesco; Kastelic, Vanja; Maesano, Francesco; Emanuele; Tiberti, Mara Monica; Tarabusi, Gabriele; Valensise, Gianluca; Vannoli, Paola

24-2: ESC2016-271  
Annual Occurrence Rates Computed with a Model Of Long-Term Predictability for the Time-Independent Seismic Hazard Assessment In Italy  
**Murru, Maura:** Falcone, Giuseppe; Console, Rodolfo

24-3: ESC2016-676  
Smoothed Seismicity Models for the Development of the 2016 Italian Probabilistic Seismic Hazard Maps  
**Akinci, Aybige:** Moschetti, Morgan; Taroni, Matteo

24-4: ESC2016-526  
FiSH: put fault data in a seismic hazard basket. Laptop-live session in Trieste, after poster at EGU16  
**Pace, Bruno:** Visini, Francesco; Peruzza, Laura

END OF POSTER PROGRAM 24
09:00–10:30

Keynote Lecture

Lecture Room: Saturnia
Chairperson: Dario Slejko

ENABDELKRIM AOUEDIA: From Adria to Idrija: lithospheric deformation and interseismic strain accumulation

11:30–12:50

11 Deformation and seismicity of the Western Hellenic Arc - Ionian Sea Plate boundary - insights into the 2015 Lefkada M6.5 earthquake

Conveners: Athanassios Ganas; Pierre Brioile; Maria Sachpazi
Lecture Room: Oceania AB
Chairperson: Athanassios Ganas

11:30–11:35: Introduction of Session 11

11:35–11:50: ESC2016-446
Finite fault modeling of the 2015, Mw 6.5, Lefkada, Greece, earthquake by using near source high-rate GPS, strong motion data and InSAR (invited talk)
Avalone, Antonio; Cirella, Antonella; Cheloni, Daniele; Tolomei, Cristiano; Theodoulidis, Nikos; Piatanesi, Alessio; Brioile, Pierre; Ganas, Athanassios

11:50–12:05: ESC2016-659
The Lefkada 2015 earthquake (Mw 6.4) rupture process as seen by regional and local seismic data
Sokos, Efthimios; Zahradnik, Jiří; Gallovič, František; Serpetisidiaki, Anna; Plica, Vladimir; Kiratzi, Anastasia

12:05–12:20: ESC2016-247
The 2015 Lefkada earthquake: a complex fault pattern constrained by seismological observations
Karakostas, Vassilios; Papadimitriou, Eleftheria; Mesimeri, Maria; Kourouklas, Christos

12:20–12:35: ESC2016-555
The November 2015 Mw=6.4 earthquake of Lefkada, Ionian Sea: Strong ground motion and its impact on the environment and the structures
Kassaras, Ioannis; Ganas, Athanassios; Kazantzidou-Firtinidou, Danai; Maxant, Jerome; Yesou, Herve; Geng, Jianghui; Psarris, Dimitrios; Lekkas, Efthimios

12:35–12:50: ESC2016-104
An analysis of the Kephalonia/Lefkada seismic sequences of 2014/2015
Caporali, Alessandro; Bruyninx, Carine; Fernandes, Rui; Ganas, Athanassios; Kenyeres, Ambrus; Lidberg, Martin; Stangl, Guenter; Steffen, Holger; Zurutuza, Joaquin

14:30–15:50

Chairperson: Pierre Brioile

14:30–14:45: ESC2016-139
The 2015 Lefkada earthquake sequence (W. Greece)
Papadimitriou, Panayotis; Karakonstantis, Andreas; Kapetanidis, Vasileios; Kaviris, George; Voulgaris, Nicholas

14:45–15:00: ESC2016-581
The Mw6.5 earthquake of 17 November 2015 in Lefkada isl. and the seismotectonics in the Cephalonia transform fault (Ionian Sea, Greece)
Papadopoulos, Gerassimos; Agalos, Apostolos; Bochini, Gian Maria; Chousianitis, Kostas; Karastathis, Vassilis; Triantafyllou, Ioanna; Kontoes, Charis; Papoutsis, Ioannis; Svigkas, Nikos; Koukouvelas, Ioannis; Zygori, Vasiliki; Tselentis, Akis

15:00–15:15: ESC2016-163
Investigation on the November 17, 2015 anomalous signal in the harbor of Crotone, Ionian Sea, by means of numerical techniques
Tinti, Stefano; Armigliato, Alberto; Pagnoni, Gianluca; Paparo, Maria Ausilia; Zaniboni, Filippo

15:15–15:30: ESC2016-556
Regional patterns of earthquake sources in western Greece: Insights on the 3-D stress tensor and seismic velocity structure arrangement
Kassaras, Ioannis; Kapetanidis, Vasilis; Karakonstantis, Andreas; Ganas, Athanassios


END OF ORAL PROGRAM 11

11:30–13:00

16 Improving seismic networks performances: from site selection to data integration

Conveners: Damiano Pesaresi; Helle Pedersen; John Clinton
Lecture Room: Vulcania 1
Chairperson: John Clinton

11:30–11:45: ESC2016-36
The ISC-GEM Global Earthquake Instrumental Catalogue: an update (invited talk)
Di Giacomo, Domenico; Storchak, Dmitry; Engdahl, Bob; Harris, James

11:45–12:00: ESC2016-44
The ISC: recycling the temporary seismic deployment data
Korger, Edith; Harris, James; Storchak, Dmitry A.

12:00–12:15: ESC2016-128
Discrimination between earthquakes and explosions using diffusion maps
Rabin, Neta; Bregman, Yuri; Lindenbaum, Ofir; Y. Ben Horin, Yochai; Averbuch, Amir
12:15–12:30: ESC2016-409
ShakeMap Implementation in Turkey
Kuru, Turgay; Ceken, Ulubey; Tepeugur, Eren; Apak, Aytaç; Kokbudak, Derya; Sezer, Selim; Ates, Erkan; Tekin, Kudret; Koksal, Teoman S.; Sahin, Cuneyt; Gok, Elcin; Ozer, Caglar; Ertugrul, Zehra C.; Worden, Bruce; Wald, David J.; Sidorov-Biryukov, Dmitry; Razinkov, Oleg; Polat, Orhan

12:30–12:45: ESC2016-418
A method to obtain an OBS precise location at the sea floor in active and passive experiments.

Pazos, Antonio; Granja Bruña, José Luis; Martín Davila, José; Cabieces, Roberto; Carbó Gorodabel, Andrés

12:45–13:00: ESC2016-525
Improving self-noise estimates of seismic sensors by coherency and alignment analysis

Gerner, Andreas; Lenhardt, Wolfgang; Grasemann, Bernhard; Sleeman, Reinoud

END OF ORAL PROGRAM 16

11:30–13:00

23 Educational seismology: empowering the community for seismic risk reduction

Conveners: Angela Saraò; Ina Cecić; Laura Peruzza, Françoise Courboulex; Carla Barnaba
Lecture Room: Vulcana 2

11:30–11:45: ESC2016-632
Communication or Education?

Solarino, Stefano; Eva, Elena

11:45–12:00: ESC2016-667
EDURISK, 15 years of risk education, state of the art

Camassi, Romano; Pessina, Vera; Bernardini, Filippo; Castelli, Viviana; Crescimbene, Massimo; Ercolani, Emanuela; La Longa, Federica; Nostro, Concetta; Pignone, Maurizio

12:00–12:15: ESC2016-704
Seismic Risk Reduction, Self-protection of children inside of the community

Sauron-Sornette, Anne

12:15–12:30: ESC2016-539
Treme-Treme® an educational game

Amaral Ferreira, Mónica; Barreto, Pedro; Sousa Oliveira, Carlos; A. Santos, Pedro; Prada, Rui; O'Neill, Hugo

12:30–12:45: ESC2016-310
Evaluate results of the simulation game "Earthquake for Kids"

Crescimbene, Massimo; La Longa, Federica; Alparone, Francesca; D’Amato, Davide; Pace, Bruno; Tanga, Rocco; Paglino, Francesco

12:45–13:00: Discussion

14:30–17:00

14:30–15:00: ESC2016-134
The Italian communication campaign "Io Non Rischio - I Don’t take Risks" (invited talk)

Piacentini, Veronica and the INR Working Team

15:00–15:15: ESC2016-670
One Hundred Years After: an educational project

Camassi, Romano; Pessina, Vera; Ercolani, Emanuela; Brasini, Flaminia; Castelli, Viviana; Meletti, Carlo; Bernardini, Filippo

15:15–15:30: ESC2016-122
Can we do something different to enhance public awareness on earthquakes? MOBEE - a new and innovative approach!

Tataru, Dragos; Toma-Danila, Dragos; Nastase, Eduard

15:30–15:45: ESC2016-372
Investigation on community resilience in Bucharest, Romania

Pavel, Florin; Calotescu, Ileana; Vacareanu, Radu; Sandulescu, Ana-Maria; Sibisteauanu, Horea

15:45–16:00: ESC2016-711
Perception of earthquake hazard and risk in the Province of Quebec and the need to raise earthquake awareness in this intraplate region

Lamontagne, Maurice; Flynn, Brian

16:00–16:15: ESC2016-343
Elapsed time: 40 years. What do youths think about the 1976 Friuli earthquake, natural hazard and seismic safety?

Peruzza, Laura; Saraò, Angela; Barnaba, Carla

16:15–16:30: ESC2016-244
People with disabilities and emergency: a survey in Friuli Venezia Giulia

Agostino, Zampa; Marco, Badanello; Christina, Conti; Michele, Franz; Ilaria, Garofolo; Paola, Pascoli; Stefano, Zanut

16:30–16:45: ESC2016-502
KnowRISK - using risk maps to identify and prevent non-structural problems

Amaral Ferreira, Mónica; Sousa Oliveira, Carlos; Mota de Sá, Francisco; Rupakhetty, Rajesh; Meroni, Fabrizio and the KnowRISK Team

16:45–17:00: ESC2016-694
VISUS: a methodology for the assessment of safety of learning facilities and for the transfer of scientific knowledge through the capacity building of surveyors.

Grimaz, Stefano; Torres, Jair; Malisan, Petra

END OF ORAL PROGRAM 23
11:30–13:00

24 FAULT2SHA - a European working group to link faults and probabilistic seismic hazard assessment communities in Europe

Conveners: Oona Scotti; Laura Peruzza
Co-conveners: Bruno Pace; Francesco Visini
Lecture Room: Saturnia
Chairpersons: Pace, Visini

F2SHA: PSHA case studies

11:45–12:00: ESC2016-589
The effect of alternative seismotectonic models on PSHA results - a sensitivity study for the case of Israel
Avital, Matan; Kamai, Ronnie

12:00–12:15: ESC2016-297
Fault approach in PSHA - a question of how to best represent knowledge and uncertainties
Chartier, Thomas; Scotti, Oona; Boiselet, Aurelien; Lyon-Caen, Helene

12:15–12:30: ESC2016-283
An example of integration of fault and seismological data for probabilistic seismic hazard analysis in Italy.
Valentini, Alessandro; Visini, Francesco; Pace, Bruno

12:30–12:45: ESC2016-545
When probabilistic seismic hazard climbs volcanoes: how 3D topography and scaling relationships influence hazard estimates. An example from Mt. Etna (Italy)
Gee, Robin; Peruzza, Laura; Pace, Bruno; Azzaro, Raffaele; D’Amico, Salvatore; Pagani, Marco

12:45–13:00: Closing, the WG, next steps

END OF ORAL PROGRAM 24

17:30–18:00

SE4 Closing Plenary

Lecture Room: Saturnia
11 Deformation and seismicity of the Western Hellenic Arc - Ionian Sea Plate boundary - insights into the 2015 Lefkada M6.5 earthquake

Conveners: Athanassios Ganas; Pierre Briere; Maria Sachpazi
Display Time: Fri, 09:00–19:00
Attendance Time: Fri, 10:30–11:30
Chairperson: Athanassios Ganas

11-1: ESC2016-144
The NOANET GSAC (Geodesy Seamless Archive Centers) tool for GNSS data dissemination in SE Europe
Argyrakis, Panagiotis; Ganas, Athanassios; Sagias, Nikolaos

11-2: ESC2016-299
Hellenides: possible locations of M7+ earthquakes defined by pattern recognition
Gorshkov, Alexander; Gaudemer, Yves; Novikova, Olga

END OF POSTER PROGRAM 11

16 Improving seismic networks performances: from site selection to data integration

Conveners: Damiano Pesaresi; Helle Pedersen; John Clinton
Display Time: Fri, 09:00–19:00
Attendance Time: Fri, 10:30–11:30
Chairperson: Damiano Pesaresi

16-1: ESC2016-91
Seismic Networks WEBNET and REYKJANET
Klicpera, Jakub; Horálek, Josef

16-2: ESC2016-185
Current state of the Arkhangelsk seismic network and results of seismic monitoring of the European Arctic region in 2015
Konechnaya, Yana; Antonovskaya, Galina; Mikhailova, Yana

16-3: ESC2016-228
Regional network performance estimation based on ambient noise amplitudes
Möllhoff, Martin; Bean, Christopher J.; Arroucau, Pierre; Grannell, James

16-4: ESC2016-296
Improvement of real time data transmission for the seismic monitoring based on the UMTS technology
Lovati, Sara; D’Alema, Ezio; Piccarreda, Davide; Franceschina, Gianlorenzo; Gomez, Antonio; Massa, Marco

16-5: ESC2016-355
Analysis of the seismicity in the Balkan Peninsula by the records of Virtual Seismological Network of Sofia University
Raykova, Reneta; Dimitrova, Lilia; Tsekov, Milen; Dimova, Lyuba; Protopopova, Valentina; Filipova, Maria; Latkovska, Desislava; Peresan, Antonella; Milanova, Milena

16-6: ESC2016-385
Quality check assessment of RSN-INGV seismic network Mandiello, Alfons; Marzorati, Simone; Cattaneo, Marco; Lauciani, Valentino; Dematin, Martina; Casale, Paolo; Marrocchi, Carlo; Fares, Massimo; Nardi, Anna

16-7: ESC2016-398
Improvement quality management of the Algerian Digital Seismic Network (ADSN)
Aili, Azouaou; Yelles-Chaouche, Abdelkarim; Ouakedi, Mohamed; Beldjoudi, Hamoud; Kherroubi, Abdelaziz

16-8: ESC2016-470
Characteristics of the ambient seismic noise recorded in urban environment. Case study: Bucharest city, Romania
Grecu, Bogdan; Borleanu, Felix; Neagoe, Cristian; Zaharia, Bogdan; Tataru, Dragos

16-9: ESC2016-474
A comparison of different filtering procedures of superconducting gravimetry data for time-series analysis of the IGETS sensing network
Valencio, Arthur; Grebogi, Celso; Baptista, Murilo

16-10: ESC2016-481
ISMD 2.0: the real time INGV Strong Motion Database
Massa, Marco; D’Alema, Ezio; Lovati, Sara; Mascandola, Claudia; Scafidi, Davide; Gomez, Antonio; Carannante, Simona; Franceschina, Gianlorenzo; Mirenna, Santi; Augliera, Paolo

16-11: ESC2016-505
Upgrading of the National Network of Seismic Stations in Slovakia
Csicsay, Kristian; Cipciar, Andrej; Bystrický, Erik; Srbecký, Miroslav; Pašák, Peter; Fojtíková, Lucia; Kristeková, Miriam

16-12: ESC2016-538
Two new Broadband Stations of the Austrian Seismic Network (OE/ZAMG)
Haussmann, Helmut; Weginger, Stefan; Horn, Nikolaus; Vogelmann, Anton; Steiner, Rudolf; Jia, Yan; Lenhardt, Wolfgang

16-13: ESC2016-562
Posthole Seismometer Installation, Performance, and Reliability in Challenging Environments
Bainbridge, Geoffrey; Parker, Tim; Devanney, Peter

16-14: ESC2016-598
Seismic noise at Bucovina (Romania) seismic array and its implication in detection of regional and distant events
Borleanu, Felix; Grecu, Bogdan; Neagoe, Cristian; Ghica, Daniela; Manea, Liviu; Popa, Mihaela
23 Educational seismology: empowering the community for seismic risk reduction

Conveners: Angela Saraò; Ina Ceci; Laura Peruzza; Françoise Courboulex; Carla Barnaba
Display Time: Fri, 09:00–19:00
Attendance Time: Fri, 10:30–11:30
Chairpersons: Barnaba, Saraò, Ceci, Peruzza

10:30–10:45 Opening of the session: brief poster summary presentations

23-1: ESC2016-394
Educational path on hazard and seismic risk by a naturalistic museum
Zandonai, Fabiana; Canali, Michela; Fava, Nello; Finotti, Franco

23-2: ESC2016-192
Tiere Motus: the historical museum of the 1976’s Friuli earthquake and its people
Marino, Floriana; and the Tiere Motus Museum Team

23-3: ESC2016-675
The 40 anniversary of the 1976 Friuli (NE Italy): a commemoration to raise the public awareness on preparedness for seismic hazard.
Saraò, Angela; Barnaba, Carla; Peruzza, Laura; Mucciarelli, Marco; and the CRS Working Team

23-5: ESC2016-276
Sustained impact on student learning: the PRESS40 Project
Barnaba, Carla; Contessi, Elisa; Girardi, Maria Rosa

23-6: ESC2016-629
An Arduino Seismograph to Raise Awareness of Earthquake Hazard at School
Saraò, Angela; Clocchiatti, Marco; Barnaba, Carla; Zuliani, David

23-7: ESC2016-208
Earthquakes in the kindergarten educate for risk mitigation
Custódio, Susana; Mata, Isabel; Matias, Luis; Rodrigues, Isabel

23-8: ESC2016-293
The macroseismic explain to the children
Sira, Christophe

23-9: ESC2016-339
Know your school: be safe! - the participatory risk communication action of the KnowRISK project
Piangiamore, Giovanna L.; Musacchio, Gemma; Eva, Elena; Crescimbene, Massimo; Falsaperla, Susanna; Solarino, Stefano; Pino, Nicola A.; and the KnowRISK (1,2,3,4) Team

23-10: ESC2016-391
Science Theatre: a complementary way to implement seismic risk reduction
Lanza, Tiziana; Musacchio, Gemma; D’Addezio, Giuliana

23-11: ESC2016-641
ScienzAperta at INGV, open-weeks of scientific information and dissemination
D’Addezio, Giuliana; and the Laboratorio Divulgazione Scientifica e Attività Museali Team

23-12: ESC2016-621
Design Educational Activities of Seismic Risk Reduction, by Considering Risk Perception Data
Crescimbene, Massimo; La Longa, Federica; Camassi, Romano

23-13: ESC2016-534
Resilience and seismic risk perception: an educational path in Calabria, southern Italy
De Pascale, Francesco; Dattilo, Valeria; Bernardo, Marcello; Muto, Francesco; D’Amico, Sebastiano

23-14: ESC2016-712
A strategy for increasing sustainability and resilience to earthquakes in Cuban communities
Berenguer Heredia, Yelena

23-15: ESC2016-686
Questions. A new approach to risk education
Modonesi, Delia; Brasiani, Flaminia; Camassi, Romano
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Ho attraversata tutta la città. 
Poi ho salita un'erta, 
popolosa in principio, in là deserta, 
chiusa da un muricciolo: 
un cantuccio in cui solo 
siedo; e mi pare che dove esso termina 
termini la città.

Trieste ha una scontrosa 
grazia. Se piace, 
è come un ragazzaccio aspro e vorace, 
con gli occhi azzurri e mani troppo grandi 
per regalare un fiore; 
come un amore 
con gelosia. 
Da quest'erta ogni chiesa, ogni sua via 
scopro, se mena all'ingombrata spiaggia, 
o alla collina cui, sulla sassosa 
cima, una casa, l'ultima, s'aggrappa.

Intorno 
circola ad ogni cosa 
un'aria strana, un'aria tormentosa, 
l'aria natia. 
La mia città che in ogni parte è viva, 
ha il cantuccio a me fatto, alla mia vita 
pensosa e schiva.
All the pictures included in this booklet were taken by Marino Sterle

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