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 Jakobsdötir 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

- **WHITE**: Participant
- **RED**: Exhibitor
- **BLUE**: LOC
- **GREEN**: Guest
- **YELLOW**: Accompanying person

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 least 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

In collaboration with
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
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10 - OGS
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| 10:30 - 11:30 | Posters Session & Coffee Break                                         |
| 11:30 - 12:30 | Oral Sessions                                                          |
| 12:30 - 14:30 | Lunch Break                                                            |
| 14:30 - 16:00 | Oral Sessions                                                          |
| 16:30 - 18:30 | Posters Session & Coffee Break                                         |

**Saturnia Auditorium:**
- Keynote Lecture - Dario Albarello: *Extensive application of seismic microzoning: methodological and socio-political issues in the Italian Experience*
- Keynote Lecture - William L. Elsworth: *Managing the Hazard of Induced Earthquakes in a Changing World* (Joint ESC-EAEE session)
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<td>Historical earthquake research in Europe</td>
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<td>From active faulting and geodynamic data to the assessment of seismic hazard:</td>
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<td>11:30-13:30</td>
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<td>11:30-13:30</td>
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<td>Educational seismology: empowering the community for seismic risk reduction</td>
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<tr>
<td>11:30-13:30</td>
<td>Improving seismic networks performance from site selection to data integration</td>
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<td>11:30-13:30</td>
<td>Deformation and seismicity of the Western Hellenic Arc – Ionian Sea Plate boundary – insights into the 2015 Lefkada M6.5 earthquake</td>
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<td>13:30-14:30</td>
<td>LUNCH BREAK</td>
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<td>13:30-15:30</td>
<td>CED Meeting - Room Marconi</td>
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<td>15:30-17:30</td>
<td>Saturnia Auditorium: CLOSING PLENARY</td>
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<td>08:00–09:30</td>
<td><strong>SE2 Opening Plenary &amp; Opening Ceremony</strong></td>
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<td>Lecture Room</td>
<td>Saturnia</td>
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<td>09:30–10:30</td>
<td><strong>Keynote Lecture</strong></td>
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<td>Lecture Room</td>
<td>Saturnia</td>
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<td>Chairperson</td>
<td>Mariano Garcia-Fernandez</td>
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<tr>
<td>DARIO ALBARELLO</td>
<td>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><strong>04 From school and citizen seismology to geoethics</strong></td>
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<td>Conveners</td>
<td>Remy Bossu; Paul Denton; Paul Earle; Giuseppe Di Capua</td>
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<td>Lecture Room</td>
<td>Oceania C</td>
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<td>11:30–11:45</td>
<td><strong>ESC2016-120</strong> 4 years of seismology in school activities in Romania</td>
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<tr>
<td>Tataru, Dragos</td>
<td>Zaharia, Bogdan; Grecu, Bogdan</td>
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<td>11:45–12:00</td>
<td><strong>ESC2016-131</strong> LastQuake: an app for massive real time crowdsourcing and seismic risk reduction</td>
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<tr>
<td>Bossu, Remy;</td>
<td>Steed, Robert; Frederic, Roussel; Gilles, Mazet-Roux</td>
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<td>12:00–12:15</td>
<td><strong>ESC2016-501</strong> Rapid estimation of earthquake intensity from Twitter’s social sensors</td>
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<tr>
<td>Meletti, Carlo</td>
<td>Cresci, Stefano; Tesconi, Maurizio</td>
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<tr>
<td>12:15–12:30</td>
<td><strong>ESC2016-626</strong> The SSE-EU programme for Educational Seismology</td>
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<tr>
<td>Choularias, 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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</table>

**END OF ORAL PROGRAM 04**
15:15–15:30: ESC2016-489
New evidence for large earthquakes in mainland Portugal: paleoseismology of the Lower Tagus Valley fault
**Foroutan, Mohammad;** Vilanova, Susana; Heleno, Sandra; Pinto, Luís; Sajedi Far, Ailár; Falcao-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; Ortúñ, María; Pallàs, Raimon; Perea, Hector; Baize, Stephane; Garcia-Meléndez, Eduardo; Martínez-Diaz, José J.; Echeverría, 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; Timouli, Youssef; Cétin, Esra; Toussaïnt, 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?
**Khalf, Mohamed Fadhlallah;** Yelles-Chaouche, Abdelkarim; Haned, Abderahman; 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
**Gorshkov, 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 Evangelidis; 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
**Jechmutálová, Zuzana;** Šilený, 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
**Vavryčuk, Václav;** Adamová, Petra

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

14:30–17:30

**Chairpersons:** Efthimios Sokos, Vaclav Vavrycuk

14:30–14:45: ESC2016-662
Fault-valve 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; Víček, Josef

14:45–15:00: ESC2016-42
Earthquake swarms versus 2014 mainshock-aftershock activity in West Bohemia, Czech Republic
**Jakoubková, 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.**
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 geo-tectonic 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, Fakhrradin; 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; Gianchini, Gianfranco; Pavón-Carrasco, F. Javier; Cesaroni, Claudio; Spogli, Luca; Piscini, Alessandro; Marchetti, Dedalo; De Santis, Anna; D’Angelo, Giulia; Musciò, Elvira; Malagnini, Andrea; Amoruso, Leonardo; Carbone, Marianna; Abbattista, Cristoforo

12:45–13:00: ESC2016-540
Uranium Groundwater Anomalies and Active Normal Faulting (invited talk)

Plastino, Wolfango
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; Mruuu, 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; Kosshobokov, Vladimir; Panza, Giuliano F.*

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

*Kossobokov, Vladimir*

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

Conveners: Graziano Ferrari; Josep Batlló
Lecture Room: Saturnia

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, Célene; 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, lunio

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

2016-520
Magnitudes of the Caucasus earthquakes 1903 - 1908

Tsereteli, Nino; Varazanashvili, Otar; Kvavadze, Nino; Gogoladze, Zurab

END OF ORAL PROGRAM 21

14:30–16:30

21 Earthquake small-aperture arrays

Conveners: Orhan Polat; Benedikt Halldorsson; Francesca Bianco; Ulubey Ceken
Lecture Room: Saturnia

14:30–14:45: ESC2016-154
Volcanic tremor at Mt. Vesuvius

La Rocca, Mario; Galluzzo, Danilo

14:45–15:00: ESC2016-159
Hydrothermal episodic tremor in the Campi Flegrei caldera

Galluzzo, Danilo; La Rocca, Mario

15:00–15:15: ESC2016-426
A strongly heterogeneous hydrothermal area imaged by surface waves: the case of Solfatara, Campi Flegrei, Italy

Serra, Marcello; Festa, Gaetano; Roux, Philippe; Gresse, Marceau; Vandemeulebrouck, Jean; Zollo, Aldo

15:15–15:30: ESC2016-559
Interpretation of Seismic Tomographic Images From Local Earthquake Data

Kaypak, Bülent

15:30–15:45: ESC2016-347
Application of multicomponent receiver function inversion to small-aperture array data from the central part of the Russian platform.

Goev, Andrey; Kosarev, Grigoriy; Sanina, Irina; Riznichenko, Oksana

15:45–16:00: ESC2016-389
Remote earthquake sequence relocation based on two regional seismic arrays and constrain for source depths using later phases of recorded seismograms

Huang, Bor-Shouh

16:00–16:15: ESC2016-1
Effect of a dipping layer on the location of Pishan earthquake sequences by the using of array methods

Hao, Chunyue; Li, Li

16:15–16:30: ESC2016-330
Application Based Seismological Array Design by Seismicity Scenario Modelling

Karamzadeh, Nasim; Heimann, Sebastian; Dahm, Torsten; Krüger, Frank
Posters Monday

04 From school and citizen seismology to geothics

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.; Camelbeeck, 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’Addezio, 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; Gilyova, 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; Rogozea, 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)
Scolaro, Silvia; Totaro, 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; Schlittenhardt, Jörg; Reicherer, Klaus

06-8: ESC2016-282
Reflection of seismotectonic processes in abnormal changes of intensity of the geomagnetic field (on the example of Oğuz earthquake in 04.09.2015, ml=5.9, H - 15km, Azerbaijan)
Rzyavev, 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; Mollihoff, 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)

Papadimitriou, Panayotis; Karakonstantis, Andreas; Kapetanidis, Vasileios; Bozionaleos, George; Kaviris, George; Voulgaris, Nicholas

07-2: ESC2016-24
Fast moment magnitude estimation using strong motion data

Craiu, George Marius; Gallo, Antonella; Costa, Giovanni; Marmureanu, Alexandru; Craiu, Andreia; Ionescu, Constantin; Danet, Anton

07-3: ESC2016-32
Earthquake energy reduction by external action from laboratory simulation

Sobolev, Gennady; Ponomarev, Alexander; Maibuk, Yuri

07-4: ESC2016-33
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; Vavrycuk, Vaclav; Doubravova, Jana; Jakoubkova, Hana

07-5: ESC2016-112
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

07-6: ESC2016-118
Scaling source properties of the earthquake sequence triggered on 22 November 2014 in the South-Eastern Carpathians foredeep area (Romania)

Popescu, Emil; Placinta, Anica Otilia; Borleau, Felix; Rudalian, Mircea; Moldovan, Iren Adelina; Coman, Alina

07-7: ESC2016-129
An Automated Moment Magnitude (Mw) and Focal Mechanism for the Algerian Digital Seismic Network (ADSN)

Beldjoudi, Hamoud; Ouakedi, Mohamed; Yelles-Chaouche, Abdelkarim; Delouis, Bertrand; Kherroubi, Abdelaziz; dabouz, Ghana

07-8: ESC2016-135
EMPIRICAL RELATIONS CONVERTING MP (MAGNITUDE USED IN BULGARIAN SEISMOLOGICAL NETWORK) TO mb, ML AND MW

Christoskov, Ludmil; Solakov, Dimcho; Simeonova, Stella; Popova, Mariya

07-9: ESC2016-140
Spatiotemporal variation of body-wave velocities in Corinth Gulf (Greece)

Karakonstantis, Andreas; Papadimitriou, Panayotis

07-10: ESC2016-141
Recent seismic activity in Saronikos Gulf (Greece) and investigation of possible volcano-tectonic features

Papadimitriou, Panayotis; Fountoulakis, 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 source mechanism of the seismic events during the sequence of the moderate-size crustal earthquake of November 22, 2014 of Vrancea region (Romania)

Craiu, Andreia; Ardeleanu, Luminita; Croiu, Marius; Diaconescu, Mihail

07-13: ESC2016-168
Estimating parameters of unusual regional explosions from seismo-acoustic observations in Israel

Gitterman, Yefim; Pinsky, Vladimir; Mazur, Michael; Aetaev, Galina

07-14: ESC2016-193
Third corner frequency of moderate Kamchatka earthquakes: station estimates agree over a network

Skorkina, Anna A.; Gusev, Dr. Alexander A.

07-15: ESC2016-196
Factors to affect coseismic fold in an overburden

Cai, Yongen; Zeng, Shaogang

07-16: ESC2016-200
Diffraction-Stack Imaging of Source and Structure – Application of TAIGER Project in Taiwan

Wang, Haw-Chun; Chen, How-Wei

07-17: ESC2016-275
Seismic moment estimated from the response spectra for small seismic events occurred in North-Eastern Italy

Moratto, Luca; Priolo, Enrico; Saraò, Angela

07-18: ESC2016-410
Algorithm that allow observe the degree of anisotropy and fracturing

Chacón Hernández, Francisco

07-19: ESC2016-646
Ssa2py: Source-Scanning Algorithm in Python

Triantafyllis, Nikolaos; Evangelidis, Christos

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
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; Grevermeyer, Ingo; Matias, Luis; Custódio, Susana

07-23: ESC2016-568  
Multiband magnitude scale for Kamchatka earthquakes: the next step of development  
Gusev, Alexander; Chebrov, Danila; Abubakirov, Iskander; Chebrova, Anastasiiia; 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  
Zábranová, 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; Tilmann, 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 Operational earthquake forecasting/prediction: advances in models, observations and verification

Conveners: Angelo De Santis; Vladimir Kossobovok; Dimitar Ouzounov; Gerassimos Papadopoulos; Antonella Peresan; Sergey Pulinets; J.D. Zechar

Display Times: Mon, 08:00–19:00 & 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: J. Zechar, D. Ouzunov

08-1: 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, Daniël; Liukis, Maria

08-2: ESC2016-634  
Could Complexity theory and Statistical physics be used to support earthquake precursors recognition?  
Vallianatos, Filippos

08-3: ESC2016-320  
Time-reversal - an efficient method for Bayesian inversion  
Debski, Wojciech

08-4: ESC2016-688  
Crimea: morphostructural zoning and seismogenic nodes  
Gorskvok, Alexander; Soloviev, Alexander

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

08-6: ESC2016-77  
Multidisciplinary observation evidence of earthquake precursors  
Zhang, Shuliang; Li, Bin

08-7: 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; Manda, Mioara

08-8: 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; Tammaro, Alberto; Santulin, Marco; Sileo, Giancarlo; Tramutoli, Valerio

08-10: ESC2016-427
Tidal evidences of strain sensitivity in mud volcanic fluids
*Martinelli, Giovanni;* Dadamo, Andrea; Albarello, 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 geophysical monitoring network for short-term earthquake prediction
*Shopin, Sergey;* Protopopov, Aleksander; Doda, Leonid; Natyaganov, 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; Gök, 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
*Borleânau, Felix;* Placinta, Anca Otilia; Rogozea, Maria; *Popa, Mihaela;* Radulian, Mircea

END OF POSTER PROGRAM 21
09:00–10:30

N.N. Ambraseys Distinguished Award Lecture

Lecture Room: Saturnia

Chairperson: Atilla Ansal

MUSTAFAR DUKK: 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 Küssling; Petr Kolinsky

Lecture Room: Vulcana 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

Kolinský, 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

Pomerova, Jaroslava; Babuska, Vladislav

END OF ORAL PROGRAM 03

14:30–17:30

05 40th anniversary of 1976 Friuli earthquakes - lessons learned

Conveners: Ina 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, Ina; 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, Ina; Renner, Gianfranco; Rebez, Alessandro

15:45–16:00: ESC2016-378
The fallout of the Friuli earthquake

Pettni, 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)

Zambetletti, Giuseppe

17:00–17:15: ESC2016-693
The contribution of Friuli’s earthquake to the knowledge of seismic behavior of historical buildings

Doglioni, 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

END OF ORAL PROGRAM 05
07 Seismic sources: theory, methods and applications

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

**Lecture Room:** Vulcania 1

**Chairpersons:** Sebastiano D’Amico, Christos Evangelidis

11:30–11:45: ESC2016-94
Challenges of moment tensor inversion for shallow explosions: the January 6, 2016, North Korea nuclear test case
**Cesca, Simone;** Heimann, Sebastian; Kriegerowski, Marius; Dahm, Torsten; Saul, Joachim

11:45–12:00: ESC2016-70
**Kim, So Gu:** Gitterman, Yefim; Vavrycuk, Vaclav; Lee, Seoung-Kyu; Kim, Matthew

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
**Gorgun, Ethem:** Kekovali, Kivanc; Kalafat, Dogan

12:15–12:30: ESC2016-241
Focal Mechanism and Tectonic Deformation in Seismogenic Area of the 2013 Lushan Earthquake Sequence, China
**Yi, Guixi:** Vallage, Amaury; Long, Feng; Klinger, Yann

12:30–12:45: ESC2016-106
The Beni-Illane Seismic Sequence of May 2010: Seismic Sources and Stress Tensor Calculations
**Beldjoudi, Hamoud;** Delouis, Bertrand; Yelles-Chaouche, Abdelkarim; Gharbi, Sofiane

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
**Coşkun, Zeynep:** Pınar, Ali

END OF ORAL PROGRAM 07

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:** D. Ouzounov, S. Pulinets

11:30–11:45: ESC2016-579
Foreshocks as a powerful earthquake precursor
**Papadopoulos, Gerassimos;** Minadakis, George; Di Fiore, Boris

11:45–12:00: ESC2016-86
An approach to automatic prediction of earthquakes: techniques, tools, and case studies
**Gitis, Valeri;** Derendyaev, Alexander

12:00–12:15: ESC2016-87
Online monitoring and analyses of seismic activity
**Derendyaev, Alexander;** Gitis, Valeri

12:15–12:30: ESC2016-72
Long-range coherence of seismic noise properties before strong earthquakes
**Lyubushin, Alexey**

12:30–12:45: ESC2016-58
Ten years of electromagnetic recordings by the Central Italy Electromagnetic Network (CIEN)
**Fidani, Cristiano**

12:45–13:00: ESC2016-246
The role of deep degassing in the problem of earthquake prediction and mining accidents with gas explosions
**Natyaganov, Vladimir;** Stepanov, Ivan; Syvorotkin, Vladimir; **Shopin, Sergey**

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: Discussion

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

13:00–13:15: Discussion

14:45–15:00: ESC2016-230
Validation of a 3D geo-model for physics-based numerical prediction of the earthquake ground-motion in the Po Plain (Italy)
Klin, Peter; Laurenzano, Giovanna; Romano, Maria Adelaida; Priolo, Enrico; Martelli, Luca

15:00–15:15: ESC2016-49
The role of vertical ground motion components in the epicentral area of a buried source: insights from numerical modelling
Peruzzi, Giacomo; Albarello, Dario; Grimaz, Stefano; Malisan, Petra

15:15–15:30: ESC2016-390
Variability of the simulated ground motion from a set of source models of the 2011 Mw5.2 Lorca earthquake
Moratto, Luca; Saraò, Angela; Vuan, Alessandro; Mucciarelli, Marco; Jimenez, Maria Jose; Garcia-Fernández, Mariano

15:30–15:45: ESC2016-440
Near-fault earthquake shaking generated by kinematic rupture simulations in the Istanbul area
Cauzzi, Carlo; Stupazzini, Marco; Paolucci, Roberto; Infantino, Maria; Smerzini, Chiara

15:45–16:00: ESC2016-178
Mixed Effect of Directivity and Directionality for Near Fault Pulse Type Ground Motions
Moghimi, Saed; Akkar, Sinan

16:00–16:15: ESC2016-81
Stochastic finite-fault ground motion simulation in seismic hazard assessment - is it worth the extra effort?
Sørensen, Mathilde B.

Reference rock and site amplification

16:15–16:30: ESC2016-636
Towards the definition of reference motions (1000 < Vs < 3000 m/s): analysis of the KiK-net data and correction of the local site effects
Laurendeau, Aurore; Bard, Pierre-Yves; Hollender, Fabrice; Ktenidou, Olga-Jan; Foundotos, Laetitia; Hernandez, Bruno; Perron, Vincent

16:30–16:45: ESC2016-443
Vs30 as a proxy for site-response - regional difference and suggested practice
Kamai, Ronnie; Abrahamson, Norm; Silva, Walt

16:45–17:00: ESC2016-714
Applicability of Site Fundamental Frequency as a Descriptive Variable for Site Response in Central and Eastern North America
Hassani, Behzad; Atkinson, Gail M.

17:00–17:15: ESC2016-16
Site Effect Study in the Ankara Region During the Moderate Bala Earthquake Series
Koçkar, Mustafa K.

END OF ORAL PROGRAM 09
Tuesday – Oral program

**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:** ESC2016-376
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:** ESC2016-124
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; Semmane, 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, Ortenzia

**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
High resolution 3D imaging of the Irpinia active fault zone part 1: Attenuation tomography

**Amoroso, Ortenzia:** Russo, Guido; De Landro, Grazia; Zollo, Aldo; Garambois, Stephane; Mazzoli, Stefano; Parente, Mariano; Virieux, Jean

**END OF TUESDAY ORAL PROGRAM 12**
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: Vulcanaia 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; Santibáñez, 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; Bourlès, 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, Mliš

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; Buratto, Pierfrancesco; Fracassì, 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, Xiaoqiang; Wang, Qi; Liu, Daiqing; 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, Francesco; 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, Iunio; 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
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; Győri, 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, Amir; Weidle, Christian; Cristiano, Luigia; Soomro, Riaz; Lebedev, Sergei; Meier, Thomas

END OF POSTER PROGRAM 03

05 40th anniversary of 1976 Friuli earthquakes - lessons learned

Conveners: Ina Ceci; Dario Slejko
Display Time: Tue, 09:00–19:00
Attendance Times: Tue, 10:30–11:30 & 17:30–19:00
Chairpersons: Slejko, Ceci

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
Ceci, 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
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, Hélôïse; Derras, Bounédîène; 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
García-Fernández, Mariano; Gehl, Pierre; Jiménez, María José; D’Aylà, 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, Sreeram

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
Azarbakh, 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
OQ-SRTK, a Python Toolkit for Seismic Site Response Analysis
Poggi, Valerio; Weatherill, Graeme; García, 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; Enrico 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, Elefteria; 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; Schmittbuhi, Jean; Kwieiat, Grzegorz; Gasparini, Paolo; Garcia, Alexander; Cassidy, Nigel; Sterzel, Mariusz; Szepieniec, Tomasz; Mutke, Grzegorz; Deineva, Savka; Kozlovskaya, Elena; Bigarre, Pascal; Schaming, Marc; Sileny, Jan; Fischer, Tomáš; Saccarotti, Gilberto; Toon, Sam

12-4: ESC2016-265
Automated detection and location of pico-seismicity 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 Vorkhnekmsoyke 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, Nicolai; Houben, Georg; Tischner, Torsten; Wegler, Ulrich; Wellbrink, Matthias; Bönßmann, 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’Alema, Ezio; Lovati, Sara; Massa, Marco; Augliera, Paolo; Franceschina, Gianlorenzo

12-10: ESC2016-381
Dynamic triggering of seismic activity in the Cape Verde hot spot, north Atlantic
Nevés, 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; Badiari, 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, Nicolai; 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; Vlček, Josef
12-17: ESC2016-17
Interferometric location of microseismic events induced by gas storage operations
Grigoli, Francesco; Cesca, Simone; Vuan, Alessandro; Priolo, Enrico

12-18: ESC2016-518
Induced seismicity in Groningen, the Netherlands
Dost, Bernard; Spetzler, Jesper

12-19: ESC2016-554
Sensitivity of kinematic and dynamic parameters of induced seismic events to sensor coverage (Garpenberg Mine, Sweden)
Erguncu Güçlü, İrem; Dineva, Savka; Grigoli, Francesco; Fjellström, Peter; Karaman, Abdullah

12-20: ESC2016-448
Location of micro-seismic events with a systematic grid-search approach
Guidarelli, Mariangela; Klin, Peter; Grigoli, Francesco; Priolo, Enrico

12-21: ESC2016-202
Influence of induced seismicity on seismic hazard in the Urals, Russia
Ruslan, Dyagilev

12-22: ESC2016-553
Abedeto - a tool to constrain event depth by depth phase modelling and visualization
Kriegerowski, Marius; Cesca, Simone; Heimann, Sebastian; Dahm, Torsten

12-23: ESC2016-317
High resolution 3D imaging of the Irpinia active fault zone part 2: Modeling of rock physical properties
De Landro, Grazia; Amoroso, Ortensia; Russo, Guido; Zollo, Aldo; Garambois, Stephane; Mazzoli, Stefano; Parente, Mariano; Virieux, Jean

12-24: ESC2016-403
Seismic hazard from natural and induced seismicity: a comparison for Italy
Mucciarelli, Marco; Priolo, Enrico; Santulin, Marco; Tamaro, Alberto
### Oral Program

#### 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 wavefield computations

#### 11:30–13:00

**01 Advances in noninvasive approaches to characterizing seismic site conditions**

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

**Lecture Room:** Oceania C

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<tr>
<th>Time</th>
<th>Session Description</th>
<th>Presenters/Details</th>
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<tbody>
<tr>
<td>11:30–12:00</td>
<td>ESC2016-252 Comparison of SPAC methodologies and results for a microtremor survey over deep soft sediments, Christchurch, New Zealand</td>
<td>Asten, Michael</td>
</tr>
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<td>12:00–12:15</td>
<td>ESC2016-635 Dispersion characteristics of surface waves inferred from 2D noise array measurements: time stability, noise sources azimuthal distribution and environmental effects</td>
<td>Oghalaei, Kaveh; Guillier, Bertrand; Cornou, Cécile</td>
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<td>12:15–12:30</td>
<td>ESC2016-132 Retrieval of Rayleigh Wave Ellipticity from Ambient Vibrations Recordings</td>
<td>Maranò, Stefano; Hobiiger, Manuel; Fäh, Donat</td>
</tr>
<tr>
<td>12:30–12:45</td>
<td>ESC2016-574 Effects of Poisson Ratio and Density Values on VS Profiles and VS30 Derived from Noninvasive Geophysical Techniques</td>
<td>Yong, Alan; Boatwright, John; Martin, Antony</td>
</tr>
<tr>
<td>12:45–13:00</td>
<td>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</td>
<td>Stephenson, William; Odum, Jackson; Asten, Michael</td>
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</table>

**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

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<tr>
<th>Time</th>
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<tr>
<td>11:30–12:00</td>
<td>ESC2016-698 Statistic bounds for magnitudes of induced and triggered seismicity (invited talk)</td>
<td>Shapiro, Serge A.</td>
</tr>
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<td>12:00–12:15</td>
<td>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)</td>
<td>Catalli, Flaminia; Hainzl, Sebastian; Rinaldi, Antonio Pio; Urpi, Luca; Improlta, Luigi; Dahm, Torsten</td>
</tr>
<tr>
<td>12:15–12:30</td>
<td>ESC2016-352 Effects on non-structural elements by induced seismicity</td>
<td>Barone, Stefano; Borzi, Barbara</td>
</tr>
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<td>12:30–12:45</td>
<td>ESC2016-414 The SIR-MIUR project INSIEME: preliminary results of the first year of activities</td>
<td>Stabile, Tony Alfredo and the INSIEME Team</td>
</tr>
<tr>
<td>12:45–13:00</td>
<td>ESC2016-436 The Matched Filtering Algorithm (MFA): Extending the potential for detection and location of microseismic events. Hints for induced seismicity hazard?</td>
<td>Caffagni, Enrico; Eaton, David; Jones, Joshua; van der Baan, Mirko</td>
</tr>
<tr>
<td>14:30–17:15</td>
<td>ESC2016-437 Induced Seismicity connections: from hydraulic fracturing to knowledge gaps, regulations, and mitigation strategy</td>
<td>Caffagni, Enrico; Bokelmann, Goetz; Lenhardt, Wolfgang; Joswig, Manfred; Sauter, Martin</td>
</tr>
<tr>
<td>14:45–15:00</td>
<td>ESC2016-441 Vp/Vs variations within the fault plane - tracking the fluids</td>
<td>Bachura, Martin; Fischer, Tomáš</td>
</tr>
<tr>
<td>15:00–15:15</td>
<td>ESC2016-461 On the seismicity recorded in the geothermal area of Mt. Amiata</td>
<td>Braun, Thomas; Caciagli, Marco; Dahm, Torsten; Famiani, Daniela; Gattuso, Alessandro; Krueger, Frank; Ohnberger, Matthias</td>
</tr>
<tr>
<td>15:15–15:30</td>
<td>ESC2016-515 Modeling of poroelastic and hydraulic response of a seasonally loaded water reservoir and implications for Reservoir-Induced Seismicity</td>
<td>Urpi, Luca; Rinaldi, Antonio P.; Catalli, Flaminia; Buttinelli, Mauro; Improlta, Luigi</td>
</tr>
</tbody>
</table>

**END OF ORAL PROGRAM 12**
15:30–15:45: ESC2016-524
Probabilistic seismic hazard assessment for the Collalto area (Northern Italy): preliminary results based on natural seismicity observations
Ge, Robin; Peruzza, 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
Poïata, 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 Muntelui 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, Honn; 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, François

END OF ORAL PROGRAM 12
14:45–15:00: ESC2016-438
Creep and locking of a low-angle normal fault: Insights from the Altotiberina fault in the Northern Apennines (Italy)
Anderlini, Letizia; Serpelloni, Enrico; Belardineelli, Maria Elina

15:00–15:30: ESC2016-488
Neo-geodynamic deformation models as input for earthquake rate calculation (invited talk)
Carafa, Michele

15:30–15:45: ESC2016-98
The integration of stress, strain, and seismogenic fault data: towards more robust estimates of the earthquake potential in Italy and its surroundings
Caporali, Alessandro; Braitenberg, Carla; Montone, Paola; Rossi, Giuliana; Valensise, Gianluca

15:45–16:00: ESC2016-327
Partition of strain rates in Southwestern Canada for new regional earthquake hazard models
Barani, Simone; Jiang, Yan; James, Thomas S.; Cassidy, John F.

16:00–16:05: Discussion
Including active fault and geodynamic models to SHA; modeler's requirements and results

16:05–16:35: ESC2016-544
Active faults in regional seismic hazard models: use and modelling insights (invited talk)
Danciu, Laurentiu; Giardini, Domenico

16:35–16:50: ESC2016-369
Understanding the Requirements of Geology in Earthquake Hazard Assessment from the Perspective of Seismic Source Modellers and Hazard Users
Weatherill, Graeme; Pagani, Marco

16:50–17:05: ESC2016-399
Seismic hazard of the Northern Apennines based on 3D seismic sources
Luca, Martelli; Federico, Sani; Marco, Bonini; Giacomino, Corti; Marco, Santullini; Tammaro, Alberto; Alessandro, Rebez; Danio, Slejko

17:05–17:10: Discussion

17:10–17:30: Overall discussion, Session closure

END OF ORAL PROGRAM 13

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
Isbilir, 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, Marzo; 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

14:30–17:30

14:30–14:45: ESC2016-478
Environmental and on buildings noise measures: Laliphtar (Kathmandu)
Sandon, Denis; Pettenati, Franco; Maskey, Sumit; Giorgi, Massimo; Cravos, Claudio

14:45–15:00: ESC2016-601
Soil-structure interaction at different test sites: An application to Istanbul, Bishkek and Mexico City
Petrovic, Bojan; Parolai, Stefano; Dikmen, S. Umit; Pianese, Giovanna; Paolucci, Roberto; Orunbaev, Moldobekov, Bolot
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
Kkalias, Harris; Papazchos, Costas; Boore, David; Margaris, Vasilis

12:15 – 12:30: ESC2016-264
The 1895 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
Carro, Rita; Ferreira, Teresa; Marques, Rita

14:30 – 17:45
Chairpersons: Cecić, Hammerl

15:00 – 15:15: ESC2016-613
Seismic Sardinia: the historical earthquakes of an "earthquake-less" island
Camassi, Romano; Castelli, Viviana; Meletti, Carlo

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

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

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, Paola; 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.
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, Lif

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; Saul, 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; Volli, 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

Győri, Erzsébet; Gráczér, Zoltán; Szanyi, Gyöngyvér; Timkó, Máté

01-4: ESC2016-180
Landslide characterization using ambient seismic noise techniques at Dunaszécső, Hungary

Szanyi, Gyöngyvér; Finta, Péter; Gráczér, Zoltán; Győri, Erzsébet

01-5: ESC2016-231
Site effects assessment along the eastern Enriquillo Plantain Garden Fault Zone in Haiti

Ulysse, Sophia Marie Johanne; Havenith, Hans-Balder; Boisson, Dominique

01-6: ESC2016-308
Investigating ambient noise recordings at lusi mud volcano (indonesia) seismic network

Panzera, 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

Soler-Llorens, Juan Luis; Galiana-Merino, Juan Jose; Giner-Catarfa, 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; Soler-Llorens, Juan Luis; Rosa-Herranz, Julio; Rosa-Cintas, Sergio; Giner-Catarfa, 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; Rodriguez, 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; Dosso, 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, Daniele; Cara, Fabrizio; Di Giulio, Giuseppe; Haimikael, Salomon; Vassallo, Maurizio; Amoroso, Sara; Cantore, Luciana; Di Naccio, Deborah; Mercuri, Alessia; Milana, Giulliano

01-18: ESC2016-663
HV-Inv: a tool for forward calculation of the HVSR and inversion of Vs structures under the diffuse field assumption

Garcia-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, Jugurtha; 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).
Poli, 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.
Poli, 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
Inferring 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; Scarfidi, 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: ESC2016-46
Investigation of the April 2013 destructive earthquake in Makran subduction zone, southeast Iran
Heidari, Ramak; Sedghi, Maryam; Gheltanchi, 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; Gheitanchi, Mohammadreza; 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; Konecny, Pavel; Lednicka, Marketa; Spötl, Christoph; Bednářík, Martin; Grimaz, 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-EAEE session)
Conveners: Angelo Masi; Maria Rosaria Gallipoli; Stefano Grimaz; 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 analyses: the case study of the Fucino plane
D’Amico, Maria; Pacor, Francesca; Milana, Giuliano; Boncio, Paolo; Famiani, Daniela; Pace, Bruno; Cutlerra, Giovanna

14-2: ESC2016-155
Seismic risk in Chisinau, Moldova
Alcaz, Vasile; Isicco, Eugen; Ghinsari, 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 Altug; 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; Lottuzzo, 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
Brüstle, 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; Šariri, 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, Dragoș

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; Gulerce, 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
Garcia, Julio; Weatherill, Graeme; Pagani, Marco; Rodriguez, Luis; Poggi, Valerio

END OF POSTER PROGRAM 25
Thursday – Oral program

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 Bossu; Andreas Rietbrock
Lecture Room: Oceania C

Chairperson: Andreas Rietbrock

11:30–12:00: ESC2016-701
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; Stammler, 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; Suhadolic, 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, Alfiò

14:45–15:00: ESC2016-258
Amplitude-dependent station magnitude
Radzyner, Yael; Ben Horin, Yochai; Steinberg, David M.

15:00–15:15: ESC2016-335
Efficient discovery and access to seismological waveform data in ORFEUS EIDA
Trani, Luca; Koymans, Mathijs; Sleeman, Reinoud

15:15–15:30: ESC2016-123
The Next-Generation Strong-Motion Data Dissemination in the European-Mediterranean Region
Luži, 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, Andres; 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; Quintilliani, Matteo; Bono, Andrea; Marroccci, 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 Altötberina Near Fault Observatory (Northern Apennines) case study.
Chiaraluce, Lauro; Cattaneo, Marco; Di Stefano, Raffaele; Latorre, Diana; Marzorati, Simone; Monachesi, Giancarlo; Valoroso, Luisa
15 Earthquake and multi hazard early warning and rapid response

Conveners: Adrien Oth; Stefano Parolai; Aldo Zollo; Matteo Picozzi
Lecture Room: Vulcana 1

The advancement of new technologies in EEW

Introducing a free and open-source earthquake early warning display
Cauzzi, Carlo; Behr, Yannik; Clinton, John; Kästli, Philipp; Elia, Luca; Zollo, Aldo

14:45–15:00: ESC2016-156
Smartphone-Network for Earthquake and Tsunami Early Warning in Chile
Böse, Maren; Brooks, Ben; Barrientos, Sergio; Minson, Sarah; Baez, Juan Carlos; Ericksen, Todd; Guillemon, 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
Buform, 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
Picozzi, 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; Picozzi, 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; Picozzi, 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

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
Pınar, 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: Vulcana 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
Allstadt, Kate; Thompson, Eric; Hearme, Michael; Zhu, Jing; Jesssee, M. Anna; Tanyas, Hakan; Wald, David

12:15–12:30: ESC2016-458
Seismic response of earthquake susceptible rock slopes
Konechnaya, Yana; Ulrich; Burjanek, Jan; Fäh, Donat

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; Clinton, John

END OF ORAL PROGRAM 17

11:30–13:00

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; Fedorenko, 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

12:45–13:00: ESC2016-96
The joys and woes of missing seismicity: the case of the Longyearbyen CO2 Lab
Kuehn, Daniela; Albaric, Julie; Bohloli, 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

14:30–17:30
Chairpersons: Peter Voss, Myrto Pirli

Structural studies

14:30–15:00: ESC2016-52
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; Kisse, Ed; 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
Sergeant, Amanda; Yastrebov, Vladislav; Mangenev, 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
Specht, Sebastian
Gajek, Wojciech; Trojanowski, Jacek; Malinowski, Michał

17:15–17:30: ESC2016-198
First results of seismo-infarsound 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 Pittakis
Lecture Room: Vulcania 2
Chairpersons: U.Dikmen, O. Ktenidou, B. Petrovic, K. Pittakis

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
Cheriff, 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
Treviopoulou, 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
Thursday – Oral program

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: 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, Boumedienne; Pierre-Yves, Bard; Fabrice, Cotton

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

14:30–17:30 Chairpersons: Pace, Scotti, Visini, Peruzza

F2SHA: geological & seismological inputs

14:30–14:45: ESC2016-285
Active thrusting across the eastern Southern Alps (Italy) inferred from geomorphic analysis: faults geometry, Pleistocene shortening-rates and implications for the 1976 Friuli seismic sequence.
Moulin, Adrien; Benedetti, Lucilla

14:45–15:00: ESC2016-294
Detailed fault slip-rates and geometry for recurrence intervals in PSHA
Faure Walker, Joanna; Visini, Francesco; Roberts, Gerald; McCaffrey, Ken

15:00–15:15: 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

15:15–15:30: ESC2016-614
Active faulting and earthquakes in the central Alboran Sea
Galindo-Zaldivar, Jesus; Estrada, Ferran; Ercilla, Gemma; Vázquez, Juan Tomás; Azzouz, Omar; d’Acremont, Elia; Sanz de Galdeano, Carlos; Gorini, Christian; Benmakhlouf, Mohamed; Alonso, Belén; Chalouan, Ahmed; Gil, Antonio José

15:30–15:45: 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

15:45–16:00: ESC2016-656
A Quaternary fault database for the Vienna Basin
Decker, Kurt; Hintersberger, Esther

16:00–16:15: ESC2016-67
Joint inversion for shallow crustal discontinuities from high-frequency waveforms of microearthquakes
Hrubcova, Pavla; Vavrycuk, Vaclav

16:15–16:30: ESC2016-114
Yetirmishli, Gurban; Kazimova, Sabina

F2SHA: simulation & modelling

16:30–16:45: ESC2016-652
Characterization of near source effects in ground motion numerical simulations
Del Gaudio, Sergio; Lancieri, Maria; Hok, Sebastien

16:45–17:00: ESC2016-707
An artificial neural network approach to support physics-based generation of broadband earthquake ground motions
Smerzini, Chiara; Gatti, Filippo; Paolucci, Roberto

17:00–17:30: 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; Infernino, Maria

END OF THURSDAY ORAL PROGRAM 24
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; Covelli, 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; Kaestell, 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; Martín 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, Fabrice; 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; Alli, 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 Time: 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-slides 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; Camelbeck, Thierry; Poiata, Natalia; Martin, Olivier; Meynard, Christophe; Thom, Christian

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

18-4: ESC2016-235
ASA1N - Antarctic Seismological Network
Plasencia Linares, Milton P.; Cravos, Claudio; Russi, 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, Lilya; Georgieva, Gergana; Raykova, Reneta; Dimitrov, Dimitar; Gurev, Vasil; Georgiev, Ivan; Raykova, Plamen; Aleksandrova, Irena; Protopopova, Valentina; Popova, Maria; Solakov, Dimcho; Simeonova, Stela

18-14: ESC2016-433
GoNorth - A new initiative for High Arctic research
Minakov, Alexander; 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; Paleide, Jan Inge; Schweitzer, Johannes; Struijk, Maartje; Tesauro, Magdala; Celli, Nicolas; Lebedev, Sergei; Jakovlev, Andrei

END OF POSTER PROGRAM 18

19 Advances in borehole networks, data, and analyses

Conveners: Seyyit Umit Dikmen; Olga-Joan Ktenidou; Bojana Petrovic; Kyriazis Ptilakis
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; Alcık, 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; Shaleyev, Eyal

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

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

19-6: ESC2016-497
Enhanced seismograms from borehole arrays
Ruigrok, Elmer; Paulissen, 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 Adelina; Toma-Danila, Dragos; Constantin, Angela Petruta; Placinta, Anica Otilia; Popescu, Emilia; Borleanu, Felix; Toader, Victorin Emilian; 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; Tarabus, 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
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 Briole; 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; Briole, 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; Gallovich, František; Serpetsidiaki, Anna; Plicka, Vladimír; 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-Firtindou, Dani; 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 Briole

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; Koutouvelas, Ioannis; Zygouri, 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, Vassilis; 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 Luís; 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 Courboulec; Carla Barnaba
Lecture Room: Vulcania 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; Sibisteanu,orea

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, Mônica; Sousa Oliveira, Carlos; Mota de Sá, Francisco; Rupakhet, 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


**Posters Friday**

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

**Display Time:** Fri, 09:00–19:00

**Attendance Time:** Fri, 10:30–11:30

**Chairperson:** Athanassios Ganas

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, Liliya; 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, Alfonso; Marzorati, Simone; Cattaneo, Marco; Lauciani, Valentino; Dematin, Martina; Casale, Paolo; Marconcì, Carlo; Fares, Massimo; Nardi, Anna

16-7: ESC2016-398
Improving quality management of the Algerian Digital Seismic Network (ADSN)

**Aïlli, 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; Augleria, Paolo**

16-11: ESC2016-505
Upgrading of the National Network of Seismic Stations in Slovakia

**Csicsay, Kristian; Cipciar, Andrej; Bystrický, Erik; Srbecký, Miroslav; Pažák, Peter; Fojtíková, Lucia; Kristeková, Miriam**

16-12: ESC2016-538
Two new Broadband Stations of the Austrian Seismic Network (OE/ZAMG)

**Hausmann, 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**
16-15: ESC2016-599
Seismological Data Information System of Kamchatka Branch of Geophysical Survey of RAS as of mid-2016
Chebrova, Anastasia; Chebrov, Danila; Matveenko, Evgeniy; Tokarev, Alexander; Chemarev, Andrey

16-16: ESC2016-620
An Urban strong ground motion network in the city of Chania, Crete. Preliminary results.
Chatzopoulos, Georgios; Papadopoulos, Ilias; Vallianatos, Filippos

END OF POSTER PROGRAM 16

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’Addezie, Giuliana

23-11: ESC2016-641
ScienzAperta at INGV, open-weeks of scientific information and dissemination
D’Addezie, 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, Fiaminia; Camassi, Romano
| Yi, Guixi, 26 |
| Yong, Alan, 35 |
| Yoshioka, Shoichi, 29 |
| Yu, Ting Tu, 32 |
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| Zacharias, Zacharias, 16 |
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| Zahradník, Jiří, 18, 53 |
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| Zamberletti, Giuseppe, 25 |
| Zambotto, Mauro, 41 |
| Zandonai, Fabiana, 57 |
| Zanferrari, Adriano, 41 |
| Zang, Arno, 33, 49 |
| Zaniboni, Filippo, 53 |
| Zavyalov, Alexey, 19 |
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| Zhang, Shuliang, 23 |
| Zhu, Jing, 46 |
| Zigone, Dimitri, 32 |
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| Zolfaghari, Mohammad R, 32 |
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| Zorzini, Fabio, 31 |
| Zotov, Oleg, 19 |
| Zuliani, David, 16, 41, 57 |
| Zupančič, Polona, 21, 47 |
| Zurutuza, Joaquín, 53 |
| Zygouri, Vasiliki, 45, 50, 53 |
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.

I have gone through the whole city.
Then I walked up a steep ascent,
densely populated here, desert over there,
shut in by a low wall:

a cozy nook where alone
I sit; and it seems to me that where it ends
the city ends, too.

Trieste has a sulky
gracefulness. When one likes it
she is like a harsh and ravenous rascal,
with blue eyes and hands too big
to give a flower;
like a love
with jealousy.

From this uphill street every church, every alley of hers
I discover, whether it leads to the encumbered beach,
or to the hill where, on the stony
top, a house, the last one, clings to it.

Around
every thing a strange
air circulates, a tormenting air,
the native air.
My city, which everywhere is alive,
has a pensive and averse.

Umberto Saba