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38<sup>th</sup> Workshop of the International School of Geophysics  
**Global challenges for seismological data analysis**  
(EMFCSC, Erice, Sicily, 25-30 May, 2012)  
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### First Circular



*Erice, Sicily*

We invite applications to attend the Workshop titled "*Global challenges for seismological data analysis*" to be held May 25-30, 2012 in Erice (TP), Sicily, Italy at the "Ettore Majorana" Foundation and Centre for Scientific Culture (<http://www.ccsem.infn.it/>). The list of organizers and invited speakers is given below.

**Scope of Workshop:** The workshop focuses on the analysis of seismological data and their use for both **monitoring** and **research**. In the last ten years, seismology has stepped *from a "standard earthquake" science, which required the download of relatively small amounts of data, to a data-intensive science* where all data need to be analyzed for discovery. Similarly, the ever-increasing *speed of the information* broadcasted by new media and the *advent of social networks* requires re-examination of the procedures for seismic monitoring and of the quality of the information. The seismological data in both cases are of fundamental importance.

The workshop will span issues ranging *from real-time availability to the mining of very large data volumes*. Much emphasis will be paid to use cases drawn from seismic monitoring and, at the apparent opposite extreme of the application spectrum, **from the analysis of very large data volumes**. Data issues such as *curation, preservation and access, object identification, core and web services* - specific but not limited to seismology - will be also addressed. This all within a **global, federated archive and data center framework** where the final objective is the provision of standard but much improved services, eventually. This all leads to the formalization of concepts such as that of the **seismological virtual observatory** as analogy to those developed in astronomy with the main difference that the seismologists' sky is within the inaccessible Earth. Discussions and brainstorming sessions will be useful toward the establishment of specific actions and services within European and global initiatives.

Scientists from as varied subject areas as seismic network operation, seismology, computer sciences are invited to participate. Much emphasis is on didactic presentations which are thought to be optimal to foster future implementations at data analysis centres.

**Financial support:** The European Community through NERA, VERCE and EPOS projects, ORFEUS and INGV will contribute to support the meeting. For developing countries participants, INGV will support living expenses of a few participants who are able to cover their own travel costs. For non-EC developed countries, participants are expected to support their full costs, although living expenses may be considered in rare cases and depending on the money available. The Workshop fee, including meals and accommodation in single and/or twin-bedded rooms, meeting costs (e.g. workshop program, welcome

cocktail & dinner, coffee breaks, farewell dinner), transportation from/to Palermo "Falcone e Borsellino" airport or from/to Trapani "Birgi" airport to/from Erice (from Palermo/Trapani railway station only if strictly necessary) is 100€ per person per night (500€ for the whole period).

Maximum number of participants: 100 (due to logistical constraints at the Workshop venue).

**Workshop format:** Lectures will take place in the mornings and early afternoons, followed by ample time for discussions and poster viewing.

### **Overview schedule**

<i>Friday, May 25</i>	Arrival, registration and room check-in
<i>Saturday, May 26</i>	Scientific sessions on " <i>From data driven to data massive research in seismology</i> " (from 9:00 a.m. at S. Domenico  Paul A.M. Dirac Lecture Hall) Welcome cocktail and dinner (8.00 p.m.)
<i>Sunday, May 27</i>	Scientific sessions on " <i>The nature of seismic data</i> " (from 9:00 a.m. at S. Domenico  Paul A.M. Dirac Lecture Hall)
<i>Monday, May 28</i>	Scientific sessions on " <i>Seismological Virtual Observatory</i> " (from 9:00 a.m. at S. Domenico  Paul A.M. Dirac Lecture Hall)
<i>Tuesday, May 29</i>	Scientific sessions on " <i>Future grand challenges in real time seismic monitoring</i> " (from 9:00 a.m. at S. Domenico  Paul A.M. Dirac Lecture Hall) Farewell dinner (8.00 p.m.)
<i>Wednesday, May 30</i>	Departure from Erice

**Application deadline:** Friday, March 30, 2012

**Application guidelines:** People interested in attending the workshop are kindly requested to return the attached application form, duly filled in, to: [silvia.nardi@ingv.it](mailto:silvia.nardi@ingv.it) (or by fax: +39 06 51860740; att. Dr. Silvia Nardi) by Friday, March 30, 2012. Graduate students should also submit a short CV and a brief letter from their doctoral supervisor indicating how attendance at the workshop will benefit them.

Applicants will be informed by mid-April 2012 whether they have been selected to participate in the Workshop.

### **Scientific program**

The Workshop Scientific Program and additional information on the meeting will be published on the INGV website (<http://erice2012may.rm.ingv.it>) as soon as possible. The program will be directly distributed to participants upon their arrival along with other information concerning Erice and the Ettore Majorana Centre.

The list of the general topics that will be presented and discussed during the workshop includes:

- *Real-Time seismological analysis for seismic monitoring*
- *Analysis of very large data volumes*
- *Seismological data archiving, curation, preservation, access*
- *Seismological metadata*
- *Seismological web services – data quality and feature characterization*
- *Relative analysis of earthquakes*
- *Monitoring variations of seismic properties*

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**Director of the Int. School Geophysics:** Prof E. Boschi  
Department of Physics, Università di Bologna, Italy

### **Directors of the Workshop (alphabetically):**

Dr M. Cocco, INGV, Rome, Italy  
Dr A. Michelini, INGV, Rome, Italy

Dr T. Van Eck, ORFEUS KNMI, De Bilt, The Netherlands  
Prof J.-P. Vilotte, IPGP, Paris, France

***Preliminary list of speakers (alphabetically):***

Dr Tim AHERN, IRIS DMC, Seattle, WA, USA  
Prof Richard ALLEN, BSL, Berkeley, CA, USA  
Dr Alessandro AMATO, INGV, Rome, Italy  
Dr Harley M. BENZ, NEIC/USGS, Golden, CO, USA  
Dr Massimo COCCO, INGV, Rome, Italy  
Dr Giuseppe FIAMENI, CINECA, Casalecchio di Reno (BO), Italy  
Prof Keith G. JEFFERY, STFC - Rutherford Appleton Lab., Didcot, Oxon, UK  
Dr Anthony LOMAX, ALS, Mouans Sartoux, France  
Dr Salvatore MAZZA, INGV, Rome, Italy  
Dr Alberto MICHELINI, INGV, Rome, Italy  
Prof Kazushige OBARA, ERI, The University of Tokyo, Japan  
Dr Nikolai SHAPIRO, IPGP, Paris, France  
Dr Alessandro SPINUSO, ORFEUS KNMI, De Bilt, The Netherlands  
Dr Torild VAN ECK, ORFEUS KNMI, De Bilt, The Netherlands  
Prof Jean-Pierre VILOTTE, IPGP, Paris, France  
Dr Peter WITTENBURG, Max Planck Institute, AH Nijmegen, The Netherlands  
Prof Aldo ZOLLO, Università degli Studi di Napoli "Federico II", Naples, Italy