



## Preface: “Improving seismic networks performances: from site selection to data integration” (EGU2015 SM1.2/GI1.5 session)

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**Abstract.** The number and quality of seismic stations and networks in Europe continually improves, nevertheless there is always scope to optimize their performance. In this EGU2015 SM1.2/GI1.5 session we welcomed contributions from all aspects of seismic network installation, operation and management. This includes site selection; equipment testing and installation; planning and implementing communication paths; policies for redundancy in data acquisition, processing and archiving; and integration of different data sets including GPS and OBS.

### 1 Introduction

The history of seismic networks sessions at European Geosciences Union (EGU) general assemblies started in 2010 with the SM1.3 “Seismic Centers Data Acquisition” session (Pesaresi, 2011), where the convener Damiano Pesaresi supported by the Orfeus Data Center (ODC) Director co-convenor Reinoud Sleeman chaired a session of 7 oral and 16 poster presentations. Later in the same year a similar session was held at the XXXII European Seismological Commission (ESC) General Assembly: “SD1, 3 Seismic centers data acquisition”, conveners D. Pesaresi and R. Sleeman, with 15 oral presentations.

The history of these sessions continued in 2011 with the EGU2011 SM1.3/G3.8/GD3.7/GI-19/TS8.7 “Improving seismic networks performances: from site selection to data integration” session (EGU2011 SM1.3/G3.8/GD3.7/GI-19/TS8.7 Improving seismic networks performances: from site selection to data integration, 2011), where the convener Damiano Pesaresi supported by the co-conveners John Clinton and Robert Busby chaired a session of 9 oral and 20 poster presentations; in 2012 with the EGU2012

SM1.3/GI1.7 “Improving seismic networks performances: from site selection to data integration” session (Pesaresi and Vernon, 2013), where the convener Damiano Pesaresi supported by the co-convenor Frank Vernon chaired a session of 6 oral and 22 poster presentations; in 2013 with the SM1.4/GI1.6 “Improving seismic networks performances: from site selection to data integration” session (Pesaresi and Busby, 2013), where the convener Damiano Pesaresi supported by the co-convenor Robert Busby chaired a session of 6 oral and 13 poster presentations; and in 2014 with the EGU2014 SM1.2/GI3.7 “Improving seismic networks performances: from site selection to data integration” session (Pesaresi et al., 2015), where the convener Damiano Pesaresi supported by the co-conveners John Clinton and Helle Pedersen chaired a session of 12 oral and 27 poster presentations.

### 2 The EGU2015 SM1.2/GI1.5 session

In the EGU2015 SM1.2/GI1.5 “Improving seismic networks performances: from site selection to data integration” session (EGU2015 SM1.2/GI1.5 Improving seismic networks performances: from site selection to data integration, 2015) the convener Damiano Pesaresi supported by the co-conveners Helle Pedersen and Yuri Starovoi chaired a session (Fig. 1) of 20 posters (Table 1).

The 20 presentations came from 13 countries (Austria, Kazakhstan, Malta, Greece, Chile, USA, France, Finland, Bulgaria, Germany, UK, Italy, Slovenia), in four continents (Europe, Asia, South America, North America), which fits well to the goals of the European Geosciences Union.

The solicited presentations in this session were the following:

**Table 1.** Poster programme for the EGU2015 SM1.2/GI1.5 session.

EGU Abstract ref.	Title	Authors
EGU2015-1611	Ground Truth and Application for the Anisotropic Receiver Functions Technique – Test site KTB: the installation campaign	Irene Bianchi, Mario Anselmi, Maria-Theresia Apoloner, Ehsan Qorbani, Katalin Gribovszki, and Götz Bokelmann
EGU2015-3702	Ebreichsdorf 2013 Earthquake Series: Relative Location	Maria-Theresia Apoloner and Götz Bokelmann
EGU2015-3708	Modeling and Detection of Regional Depth Phases at the GERESS Array	Maria-Theresia Apoloner and Götz Bokelmann
EGU2015-4516	Seismic monitoring of Central Asia territory in KNDC res	Aidyn Mukambayev and Natalia Mikhailova
EGU2015-4523	Recent developments in the setting up of the Malta Seismic Network	Matthew Agius, Pauline Galea, and Sebastiano D'Amico
EGU2015-6232	The Hellenic Seismological Network Of Crete (HSNC): Validation and results of the 2013 after-shock sequences	Georgios Chatzopoulos, Ilias Papadopoulos, and Filippos Vallianatos
EGU2015-7561	Field Installation and Real-Time Data Processing of the New Integrated SeismoGeodetic System with Real-Time Acceleration and Displacement Measurements for Earthquake Characterization Based on High-Rate Seismic and GPS Data	Leonid Zimakov, Michael Jackson, Paul Passmore, Jared Raczka, Marcos Alvarez, and Sergio Barrientos
EGU2015-7985	Comparative Noise Performance of Portable Broad-band Sensor Emplacements	Justin Sweet, Eliana Arias-Dotson, Bruce Beaudoin, and Kent Anderson
EGU2015-9164	Sources of high frequency seismic noise: insights from a dense network of ~250 stations in northern Alsace (France)	Jerome Vergne, Antoine Blachet, Maximilien Leheur and the EstOF Team
EGU2015-9965	AlpArray Austria – Illuminating the subsurface of Austria and understanding of Alpine geodynamics	Florian Fuchs, Götz Bokelmann, Irene Bianchi, Maria-Theresia Apoloner, and AlpArray Working Group
EGU2015-11264	Automatic data processing and analysis system for monitoring region around a planned nuclear power plant	Timo Tiira, Outi Kaisko, Jari Kortström, Tommi Vuorinen, Marja Uski, and Annakaisa Korja
EGU2015-11506	Automatic classification of seismic events within a regional seismograph network	Timo Tiira, Jari Kortström, and Marja Uski
EGU2015-11525	Introduction of digital object identifiers (DOI) for seismic networks	Peter Evans, Angelo Strollo, Adam Clark, Tim Ahern, Rob Newman, John Clinton, Catherine Pequegnat, and Helle Pedersen
EGU2015-11614	Local network deployed around the Kozloduy NPP – a useful tool for seismological monitoring	Dimcho Solakov, Stela Simeonova, Liliya Dimitrova, Krasimira Slavcheva, Plamena Raykova, Maria Popova, and Ivan Georgiev
EGU2015-12129	Preliminary performance report of the RHUM-RUM OBS network	Simon C. Stähler, Wayne Crawford, Guilhem Barrool, Karin Sigloch, and Schmidt-Aursch Mechita
EGU2015-12279	The Austrian National Network 2014	Nikolaus Horn, Helmut Hausmann, and Yan Jia
EGU2015-12334	“SeismoSAT” project results in connecting seismic data centres via satellite	Damiano Pesaresi, Wolfgang Lenhardt, Markus Rauch, Mladen Živčić, Rudolf Steiner, Michele Bertoni, and Heimo Delazer
EGU2015-13196	Seismic noise recorded by seafloor observatories at Mediterranean sites	Mariagrazia De Caro, Stephen Monna, Francesco Frugoni, Laura Beranzoli, and Paolo Favali
EGU2015-14387	Impact of sensor installation techniques on seismic network performance	Geoffrey Bainbridge, Michael Laporte, Dario Baturan, and Wesley Greig
EGU2015-14813	UMTS rapid response real-time seismic networks: implementation and strategies at INGV	Aladino Govoni, Lucia Margheriti, Milena Moretti, Valentino Lauciani, Gianpaolo Sensale, Augusto Bucci, and Fabio Criscuoli

**Figure 1.** EGU2015 SM1.2/GI1.5 session (from the EGU2015 home page).

- i. “Comparative Noise Performance of Portable Broad-band Sensor Emplacements”, by Justin Sweet, Eliana Arias-Dotson, Bruce Beaudoin, and Kent Anderson (Sweet et al., 2015);
- ii. “Sources of high frequency seismic noise: insights from a dense network of  $\sim 250$  stations in northern Alsace (France)”, by Jerome Vergne, Antoine Blachet, Maximilien Lehujeur and the EstOF Team (Vergne et al., 2015);
- iii. “AlpArray Austria – Illuminating the subsurface of Austria and understanding of Alpine geodynamics”, by Florian Fuchs, Götz Bokelmann, Irene Bianchi, Maria-Theresia Apoloner, and AlpArray Working Group (Fuchs et al., 2015);
- iv. “Introduction of digital object identifiers (DOI) for seismic networks”, by Peter Evans, Angelo Strollo, Adam Clark, Tim Ahern, Rob Newman, John Clinton, Catherine Pequegnat, and Helle Pedersen (Evans et al., 2015);
- v. “Impact of sensor installation techniques on seismic network performance”, by Geoffrey Bainbridge,

Michael Laporte, Dario Baturan, and Wesley Greig (Bainbridge et al., 2015).

### 3 Conclusions

The quality and quantity of presentations made at the EGU2015 SM1.2/GI1.5 session satisfied the expectations of the convener and co-conveners and fit the goals of the European Geosciences Union.

This year, for the first time, the number of presentations at the seismic networks session decreased; however, the same is true for the overall number of presentations of the entire EGU2015 General Assembly. Therefore, the conveners are still confident that the path they followed in organizing such sessions at the yearly EGU General Assembly is a valid one, since there is need in the seismological community worldwide to present and discuss different solutions to common problems in running seismic networks.

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mer EGU Seismology Division President (and future EGU Seismology Division Vice-President) Charlotte Krawczyk, for her continuous strong support of the seismic networks sessions at the EGU, and welcome the new EGU Seismology Division President Paul Martin Mai.

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