



SEISMOLOGY @ SCHOOL TRAINING COURSES: WHEN TEACHERS BECOME STUDENTS

Stefano SOLARINO¹, Paul DENTON², Jean Luc BERENGUER³, Aldo ZOLLO⁴, Anne SAURON⁵ and Françoise COURBOULEX⁶

The WP 8 “Networking School Seismology programs” is the part of the 2010-2014 NERA project (Network of European Research Infrastructures for Earthquake Risk Assessment and Mitigation) which aims at fostering the integration of school seismology projects across Europe and create the organization to facilitate new national projects to be initiated and to join in.

One main activity planned within the WP is to organize in-service training workshops aimed at secondary school teachers of sciences or geosciences who are interested in finding out how to use seismology in their own classrooms. This is meant to be a “hook” to students interested in a wide range of science topics and as a socially relevant context for seeing how the work of scientists impacts everyday lives.

Within the NERA frame two training courses have been organized and held, one in Napoli, Italy in 2012 and one in Valbonne, France in 2013. The next course will take place in Sion, Switzerland, in October 2014.

The attendance was in both cases of more than 30 people from several countries in Europe and teachers coming from US and Philippine in the first and second course respectively. One of the main issue is that teachers may come from different educative systems and different backgrounds (earth sciences, physics, engineering); a great effort was then made in the organization of the activities to provide all participants with a common scientific and technical knowledge.

The courses were organized in classes in the morning, “hands on” laboratory activities (Zollo et al., 2014) in the afternoon and a field trip. In particular in the hands on activities teachers used real time data provided by the schools participating in the seismology@school network, where several European schools collect and share data recorded on professional or semi professional instruments (Berenguer et al., 2014; Solarino, 2012).

The topics of the classes spanned from the basics of seismology (earthquakes and waves, propagation, earthquake location) to advanced and applicative arguments (site effects, seismic hazard and risk) to the seismic history of the country that hosted the school.

In the practical activities teachers learn how to assemble a simple seismometer, to download and select the data from the internet repository, to pick phases, to locate an earthquake, to compute the magnitude, to display seismic data using softwares specifically designed.

One special event is the “teachers’ corner”, where participants turn to protagonist by showing and discuss posters or giving short talks describing seismo-volcanological topics or education initiatives relevant for their countries, carried out with their students or other colleagues . This activity

¹ PhD, Istituto Nazionale di Geofisica e Vulcanologia, Genova, stefano.solarino@ingv.it

² Msc, British Geological Survey, Keyworth, pdenton@bgs.ac.uk

³ Msc, Centre International de Valbonne, Valbonne, Jean-Luc.Berenguer@ac-nice.fr

⁴ Prof., University of Naples Federico II, Napoli, aldo.zollo@unina.it

⁵ PhD, Swiss Federal Institute of Technology, Zurich, anne@sed.ethz.ch

⁶ PhD, UMR Geoazur, Valbonne, courboulex@geoazur.unice.fr

is also meant to improve the relationship among teachers from different countries, establishing a network of likely cooperating schools .

In this contribution we describe in more details the past courses placing emphasis on the main educative aspects and on the results obtained in terms of improved knowledge of seismological topics and seismic risk awareness.

We also discuss the feedback (comments, suggestions and rate) of the teachers from the evaluation form they are required to compile at the end of the training course. In principle teachers rate positively the initiative and acknowledge an improvement with respect to the standard school programs due to the fact that most lectures are given by professional seismologists. As regards the general organization of the courses, teachers ask for more practical activities since this is the part they miss the most in their schools, especially those that are not included in the seismo@school network.

REFERENCES

- Berenguer J-L, Courboux F, Tocheport A and Bouin M-P (2013) "Tuned in to the Earth...from the school EduSismo: the French educational seismological network" *Bulletin de la Societ  Geologique de France*, 184,1-2, 183-187
- Solarino S (2012) "Are seismograms recorded in schools educational tools only ?", *Atti 31° Convegno GNGTS*, Potenza 2012, 97-101
- Zollo A, Bobbio A., Berenguer J-L, , Denton P, Festa G, Sauron A, Solarino S, Haslinger F and Giardini D (2014) "Workshop and laboratory-based approaches, The European experience of educational seismology". *Geoscience Research and Outreach. Schools and Public Engagement. Series: Innovations in Science Education and Technology*, Vol. 21 Tong, Vincent C. H. (Ed.) IX, 340 p., Springer