

# 5<sup>th</sup> European MagNetE Workshop

## Rome, 9-11 May, 2011

### Summary and Conclusions

The 5<sup>th</sup> European Repeat Station (MagNetE) Workshop was hosted by the Istituto Nazionale di Geofisica e Vulcanologia (INGV) in Rome on 9-11 May, 2011. 40 participants from 21 countries attended the workshop.

The workshop consisted of 4 oral sessions, posters, a visit to Durlin geomagnetic observatory and a discussion session.

An important part of the oral and poster sessions were overviews of repeat station activities during the past 2 years throughout Europe and the status of the MagNetE European declination map for 2006.5. New measurements have been carried out in many countries in 2009 and/or 2010. Further presentations dealt with secular variation in Europe, regional magnetic field modelling, the ergodicity of the magnetic field, the use of variometers in repeat station surveys and the possible use of repeat station data to discriminate between remanent and induced lithospheric magnetisation. In an invited talk the project EPOS (European Plate Observing System) was presented.

#### **Minutes of the Discussions**

The following is a summary of dedicated discussion sessions and topics discussed following presentations.

#### ***European data distribution***

Gerald Duma has updated the MagNetE report about the current status of repeat station measurements in each country based on a questionnaire distributed by e-mail several months prior to the workshop.

#### ***European declination map and MagNetE publication***

##### a) Status of the map

As decided on the previous workshop in 2009 the 2006.5 repeat station data from all countries (in some cases reduced from surveys in 2005 or 2007) have been collected by Isabel Socias and Tom Shanahan and were available in time to produce a draft European declination map. The draft has been produced by Gerald Duma and Barbara Leichter and was on display for discussion during the workshop. One open question that has to be resolved shortly is how to include the secular variation information on the map. It will either be included as a small side-map or overlaid on the main map by contour lines of another, unobtrusive colour.

##### b) Description of the map

The map legend and description have also been on display and have been discussed. The outcome was an outline of the important facts on data, modeling method and contributors

which have to be printed directly on the map sheet. The text will be written by Gerald Duma and Barbara Leichter and will then be distributed for approval. Some additional background information on MagNetE and more details should be published as a flyer and/or a paper in a suitable journal. It was agreed that the suggested special issue of *Annals of Geophysics* (see below) would be the ideal place.

c) Publication of the map

The Commission for the Geological Map of the World (CGMW) has accepted to publish the map and the draft has already been reviewed by 2 external reviewers.

All contributors will be listed as authors in alphabetical order. It was decided during the discussion that the first author on the list will be Gerald Duma from the institute where the map was actually compiled.

d) Update of the map

Some discussion dealt with a possible update of the map, but no final decisions were made. An epoch of update might be 2010. Improvements could include a digital version of the map, possibly with an interactive web interface, and a map of three components, i.e. a description of the full vector field.

***Special issue of *Annals of Geophysics****

There is an offer by the editors of *Annals of Geophysics* to publish a special issue with papers on MagNetE activities. About 15 presenters from the workshop expressed their interest to contribute to such a special issue. A publication on the European declination map 2006 would form a good introductory paper for such a special issue.

***Visibility of MagNetE***

MagNetE has been promoted by a flyer at the 2009 IAGA meeting in Sopron. In July 2011 there will be an invited presentation of the MagNetE activities presented at the session on geomagnetic observation at the IUGG meeting in Melbourne by Gerald Duma and Barbara Leichter.

***Regional magnetic field modelling***

A new regional modelling technique was presented in a contribution by S. Filippov and he expressed his interest to compare different regional modelling techniques in a collaboration. It seems advisable to do such a comparison based on exactly the same dataset. Enkelejda Qamili expressed her interest to become involved and further cooperations are welcome.

***EPOS***

Brief background information on EPOS:

“The European Plate Observing System (EPOS) is the long-term, integrated, solid Earth Sciences research infrastructure approved by the European Strategy Forum on Research Infrastructures (ESFRI). The goal of EPOS is to promote and make it possible innovative approaches for a better understanding of the physical processes controlling earthquakes, volcanic eruptions, unrest episodes and tsunamis as well as those driving tectonics and Earth surface dynamics.” (Introduction from the EPOS website [www.epos-eu.org](http://www.epos-eu.org))

“EPOS will integrate the diverse, but advanced European Research Infrastructures for solid Earth Science, and will build on new e-science opportunities to monitor and understand the dynamic and complex solid-Earth System. EPOS will identify existing gaps and promote implementation plans with other disciplines of environmental science to help solve the grand challenges facing the Earth and its people.” (EPOS Mission Statement from website [www.epos-eu.org](http://www.epos-eu.org))

This large European project was introduced in a presentation by Massimo Cocco.

It was discussed whether the MagNetE group should contribute their magnetic data to EPOS. It seems it could be useful to include the European geomagnetic data in this project, which will provide a unified geophysical data repository. However, the geomagnetic data are already well integrated in the WDCs and the concern was raised that the proper acknowledgement to the data producers must be given in such a European data system. The conclusion from the discussion was to make no commitments but to follow the development of the project and keep the possibility for contribution open. Pavel Hejda agreed to keep the MagNetE group informed, probably with the help of one or a few others.

#### ***Next MagNetE meeting***

Pavel Hejda kindly offered to host the next MagNetE meeting in 2013 in Prague, Czech Republic. May 2013 seems to be a good time for the workshop to avoid clashes with other meetings like IAGA.

#### ***Outlook***

It was pointed out that repeat station data can be very useful for the independent validation of magnetic satellite data and global models. Mioara Manda suggested that the repeat station surveys in the European countries should be kept up during the upcoming Swarm ESA satellite mission, expected to be launched in 2012.

#### ***New MagNetE Committee***

The new MagNetE committee consists of

Guido Dominici

Tom Shanahan

Isabel Socias

Barbara Leichter

Pavel Hejda