http://simp.dst.unipi.it

Italian Society of Mineralogy and Petrology

PETROLOGICAL EVOLUTION OF THE EUROPEAN LITHOSPHERIC MANTLE: FROM ARCHEAN TO PRESENT DAY (EMAW2007)

The first workshop on European mantle petrology (EMAW2007) was held in Ferrara, Italy, August 29–31, 2007. It was organized by M. Coltorti, H. Downes, M. Grégoire, and S. Y. O'Reilly and sponsored by the University of Ferrara, the Istituto Universitario di Studi Superiori (IUSS) of the same university, the Gruppo Nazionale di Petrografia (GNP), and the Federazione Italiana di Scienze della Terra (FIST). The workshop assessed the state of petrological knowledge of the European subcontinental lithospheric mantle and gathered about 100 researchers. Some 20% of them were MSc or PhD students or postdoctoral researchers, who were able to attend thanks to a special reduced fee.

The workshop provided an opportunity for researchers working on European mantle petrology to discuss their different ideas and models. The meeting highlighted significant discrepancies in the way mantle material is studied in various countries, often due to different technological capabilities. Some areas of Europe are well studied, while others are poorly known. In some cases model development seems to depend on the available facilities, resulting in limitations in scope. This fragmentation, together with limited financial means, is not beneficial to scientific and technological advancement. Thus, greater interaction and cooperation among European mantle petrologists is required. For this reason the participants were enthusiastic in recommending continuation of this forum on a biennial basis (in 2009 it will probably be held in Toulouse). They were also keen to develop ways of sharing instrumentation and technical equipment available in Europe, in order to spread knowledge and develop a common scientific language among disciplines.

Participation of the Australian group (GEMOC) was particularly significant. The technology they have been developing in recent years has led to the concept of 4-D mapping (space and time) of the upper mantle in many regions (e.g. Australia, Siberia, North America, Africa). Furthermore, the development of in situ geochronological methods on zircon and sulfides has revealed connections between geological events recorded in the crust and mantle. This approach allows modeling of lithospheric composition and evolution on a large scale, thus improving the synergy with geophysics.

Material regarding the workshop (abstracts, list of participants, and selected presentations as pdf files) is available at www.unife.it/dipartimento/scienze-terra/emaw-2007.

SIMP PRIZES FOR 2007

Bianchi Prize in Petrology – 2 Winners ex aequo

Patrizia Fumagalli completed a degree in Earth sciences at the University of Milan (Italy) in 1997 and a PhD in high-pressure experimental petrology in January 2000. After a postdoctoral fellowship at the University of Michigan (USA), she was introduced to first-principles calculations as a tool to understanding high-pressure behavior of phases. Currently, she is carrying out research in petrology in the Department of Earth Sciences of the University of Milan. Her main interests lie in the understanding of metamorphic phase equilibria in subduction zones and extensional settings. She combines various methodologies in different disciplines (e.g. mineralogy, geophysics, first-principles calculations) with the petrology of subduction zones to define the thermodynamics and crystal chemistry of high-pressure minerals (chlorite, phlogopite, amphibole, dense hydrous magnesium silicates). She applies high-pressure techniques (diamond anvil cell, piston cylinder, multianvil cell) and analytical techniques (X-ray diffraction, Raman spectroscopy, electron microprobe work, scanning electron microscopy) to studies in the fields of materials science and gemmology.

Daniele Brunelli is a researcher in petrology at the University of Modena (Italy) and an associated researcher at the Institute for Marine Sciences of the Italian Research Council in Bologna. He graduated from Padova University in 1997 and received a PhD in Earth sciences from the University of Bologna in 2002. His research deals with the processes of melt production and extraction in the suboceanic mantle. He has worked on trace-element distribution in mantle residua, associated MORBs, and early melts in melt inclusions in order to characterize long- (My) and short-time scale (ky) magmatic cycles at mid-ocean ridges. He recently worked on oceanic core complex formation and ultraslow spreading ridges associated with mantle cold spots. Since his university studies he has participated as a petrologist in several oceanic expeditions along the Mid-Atlantic Ridge and the Southwest Indian Ridge. He was a Euromelt postdoctoral researcher at the Laboratoire Pierre Sue (CEA, Paris) and at the Institut de Physique du Globe de Paris from 2003 to 2006.