

## **Mineralogy and petrology of the upper mantle: Where we come from and where we are going**

Michel Grégoire ([Michel.gregoire@get.omp.eu](mailto:Michel.gregoire@get.omp.eu))

Costanza Bonadiman ([bdc@unife.it](mailto:bdc@unife.it))

Magdalena Matusiak-Malek ([magdalena.matusiak-malek@uwr.edu.pl](mailto:magdalena.matusiak-malek@uwr.edu.pl))

The nature and evolution of the Earth's lithospheric mantle is largely constrained from the studies of natural samples as xenoliths in mantle-derived melts or in orogenic peridotite massifs and ophiolites. Partial melting, recycling in subduction zones or related to delamination processes, as well as mantle metasomatic processes, are responsible for the very heterogeneous nature of the Earth upper mantle. Deciphering the interaction of lithosphere with asthenosphere and deeper mantle is critical to understanding the mantle secular evolution and to propose relevant models reconciling findings from petrological, mineralogical, petrophysical and geochemical approaches. Then those models based on natural samples are coupled with experiments and geophysical data, in order to better understand, scales and amplitudes of upper mantle heterogeneities as well as their dynamic role. Therefore the session's focus primarily on results from natural sample studies but experimental and numerical modelling are more than welcome as they are essential research corollary. Multidisciplinary contributions are strongly encouraged.