

## INTERNATIONAL PHD SCHOOL – “MELTING AND FLUID/MELT-ROCK REACTIONS IN THE MANTLE – MEREMA”

The second edition of the International School: “Melting and fluid/melt-rock reactions in the mantle – MEREMA” was organized by the Italian Society of Mineralogy and Petrology (SIMP) in collaboration with the PhD programs of the Universities of Ferrara, Genova, Milano, Modena – Reggio Emilia, Pavia, and Torino. The European Geosciences Union (EGU) and European Mineralogical Union (EMU) acted in partnership and co-sponsored the event.

The school was held in Sestri Levante (FIG. 1), a small pearl of the splendid Tigullio Gulf in the Ligurian Sea (northwestern Italy) on 24–28 October 2021, four years after the first edition (12–17 February 2017). In between, the COVID-19 pandemic definitely changed our way of relating to people and communicating science, and transferring knowledge between different generations of researchers. In such a frame of mind, it has been a real challenge to propose to the scientific community and partnership our intention to have students and lectures in person only, trying to overcome all of the fears to meet *vis à vis*.



**FIGURE 1** Panoramic view of Sestri Levante and the Tigullio Gulf from the school venue (PHOTO: HOTEL VIS À VIS)

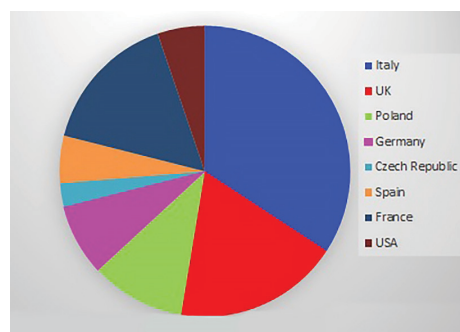
“Vis à Vis” is also the name of the main venue of the School, the congress centre in Sestri Levante that helped us to arrange the activities in full compliance with the Italian health rules imposed by the COVID-19 pandemic. The audience, including lectures and organisers, was fixed to 60 participants with certification of complete COVID-19 vaccination.



**FIGURE 2** MEREMA-2 participants group

The school was attended by a select group of 38 PhD students and early researchers from nine countries, gathering broad interest in Earth and planetary mantle processes (FIG. 3). The students and young researchers shared four days of full lectures and discussion sessions with top level scientists, which offered an overview of the Earth’s entire mantle system, covering topics such as:

- Chemical differentiation and internal structure of the Earth (W. McDonough, A.W. Hofmann, G. Caro)
- Mineralogy of the lower mantle and nature of the core-mantle boundary (D. Andraut)



**FIGURE 3**

Country distribution of student participants

- Geophysical probing of mantle heterogeneities: insights on mantle dynamics from seismic tomography (B. Romanowicz, C. Farnetani)
- Mantle reservoirs: origin and length scale of chemical/isotopic mantle heterogeneities (A.W. Hofmann, A. Stracke)
- Transfer of heterogeneities from the deep mantle to the melting mantle sources and finally to the extruded melt regions (R. Katz, Y. Ricard, S. Lambart)
- Geochemical processes of the lithospheric mantle (M. Godard, M. Gregoire).



**FIGURE 4** (A) Elisabetta Rampone (University of Genova, Italy) presents to the audience the MEREMA School – second edition. (B) Cinzia Farnetani (Institut de Physique du Globe de Paris, France). (C) Denis Andraut – Université Clermont Auvergne, France.

An interesting and cutting edge overview of the new frontiers in trace elements and isotopic analyses using QQQ-ICP-MS was provided by the team of Agilent Technologies® (L. Mounier). Each day, the students had the opportunity to present their researcher with “flash talks” that strongly contributed to enrich the school program. Despite the critical period, the entire week saw significant interaction and passionate conversation among all participants that also continued during the various convivial moments (FIG. 5), in full compliance with rules imposed by the COVID-19 pandemic. Very positive feedback from the students, as well as the invited lectures, has stimulated the Scientific Committee to continue this experience and consider a third edition MEREMA School.

We hope to meet the *Elements’* readers at the third edition of the MEREMA School!

### The Merema School

#### Scientific Committee

Elisabetta Rampone, Costanza Bonadiman, Daniele Castelli, Cinzia Farnetani, Patrizia Fumagalli, Nadia Malaspina, Alessandra Montanini, Maurizio Mazzucchelli, Andreas Stracke, Al Hofmann, Riccardo Tribuzio, Alberto Zanetti

See the full Merema report at <https://www.socminpet.it/Merema/>