2021-25 Task Force II

DEFORMATION AND MAGMATIC PROCESSES FROM THE LITHOSPHERE TO THE SURFACE: INTEGRATED MULTIDISCIPLINARY APPROACHES

Leaders: Alessandro Tibaldi, University of Milan Bicocca (Italy)
Agust Gudmundsson, Royal Holloway University of London (UK)
Greg Waite, Michigan Technological University (USA)

Research activities

- **Collection of interdisciplinary data related to TF II themes including:**

- field data by different methodologies at several volcanoes in different countries,
- analogue physically-scaled experiments,
- numerical modelling.

- The research network of 68 scientists from 18 countries was expanded with 8 more researchers.
- Results have been published in 71 peer-reviewed papers - list of publications on the TF II website.

Areas of field work in 2022

Mt Etna and Stromboli (Italy), Iceland, Andes, Azores, Central America, Greece, Canary Islands, Kilauea Volcano (Hawaii).

Special efforts on numerical modelling of complex settings and use of Virtual Reality (https://geovires.unimib.it)

Dissemination in 2022

- We developed and updated a dedicated website: **www.ilptaskforce2.unimib.it**
- Volcanological field trip in Santorini linked to Cities on Volcanoes (COV11) congress.

Meetings in 2022

- EGU GMPV9.4 Volcanic processes: Tectonics, deformation, geodesy, unrest.
- EGU TS4.1 This Rift is on Fire: Volcano-Tectonic Evolution of the Christiana-Santorini-Kolumbo volcanic field, Aegean Sea.
- Cities on Volcanoes S2.15: The Role of Tectonics on the Emergence and Evolution of Volcanic Features.
- Cities on Volcanoes S1.18: Integrating knowledge of tectonic and magmatic processes with monitoring during periods of volcanic unrest.
- Cities on Volcanoes S1.20: Submarine Volcanism: volcanic hazards, seafloor monitoring and public awareness.

Plans for 2023

- **Dissemination & young researchers**

  EGU 2023 Geoscience Days, national public engagement event (waiting for approval)

- **Congresses**

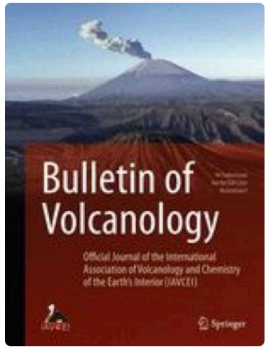
  - Three sessions at the EGU congress, Wien

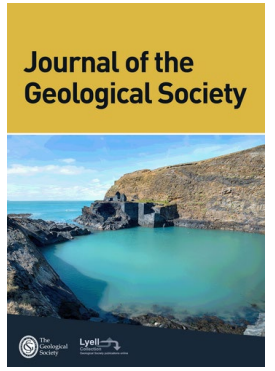
- **Field and lab work**

  - Several field missions are already planned, e.g. Iceland and Mt Etna, + joint lab work

- **Special Issue of Bulletin of Volcanology**

  "Volcanic Processes: Tectonics, Deformation, Geodesy, Unrest",
  Guest Editors: W. Chadwick, J. Ruch, A. Tibaldi



- **Special Issue of J. Geol. Soc. of London**

  "The Role of Tectonics on the Emergence and Evolution of Volcanic Features",
  Guest Editors: D. Papanikolaou, F. Bonali, C. Hubscher, P. Nomikou