
Continental Tectonics Group

„We seek cooperation with academia or industry on interesting tectonic and structural geology problems.“

Offer

We offer long-term experience and knowledge across a wide range of Earth Science disciplines with potential applications in:

- Geological and structural mapping in a wide range of geologic settings (volcanic areas, plutonic and metamorphic complexes, sedimentary basins)
- Fabric and strain analysis of geological bodies in 3D
- Rock magnetism, magnetic anisotropy measurement, analysis and modeling
- Tectonic analysis
- Analysis and interpretation of brittle fractures and paleostress evolution
- Advanced geological data processing, interpretation, and modeling
- Geological consulting

Know-how & Technologies

Tectonics, Structural Geology, Magmatic Processes and Volcanology, Rock Magnetism

Our goal is research excellence and a better understanding of how the Earth works, with a particular emphasis on orogenic processes and crustal magmatism. We study:

- Tectonic development of active continental margins and collisional orogens
- Interactions of plate motions, crustal melting, magmatism, and tectonic deformation
- Tectonics of sedimentary basins
- Magnetic properties and fabric analysis of geomaterials

Content of Research

- Magma transport and emplacement in the Earth's crust
- Evolution and dynamics of collisional and accretionary orogens and magmatic arcs
- Paleotectonic reconstructions
- Applications of the anisotropy of magnetic susceptibility (AMS) method in Geosciences

Main Capabilities

- Field geology
- Geological mapping
- Tectonics and structural geology
- Optical methods
- AMS
- Image analysis
- Computer-based geological data processing
- GIS

Key Research Equipment

- Laboratory of Rock Magnetism: high-end facility for measuring the magnetic susceptibility of oriented specimens, statistical data processing and interpretation (multi-function Kappabridge MFK-1A with 3D rotator, CS4 Furnace Apparatus, and CS-LLow-temperature Cryostat Apparatus)
- Optical microscopy: Nikon Eclipse 100LVPol microscope mounted with a high-resolution Canon camera and supported by the NIS-Elements D 3.2 software for image processing and analysis

- Field work and expeditions: complete sampling equipment including hand-held drills for taking oriented cores, expedition gear for field work in wilderness and remote areas

Partners and Collaborations

Czech Geological Survey | Institute of Geology, Czech Academy of Sciences | Czech Technical University in Prague | National Museum Prague | University of Salzburg, Austria | Goethe University, Frankfurt am Main, Germany | University of Houston-Downtown, USA | University of Southern California, USA | University of California, Northridge, USA | New Mexico Highlands University, USA

Achievements

Vigorous publication activity in highly ranked international journals, regular contributions to international conferences, organizing international meetings, work-shops, and field trips, a variety of educational activities in geology.

Main Projects

- Sedimentary record and mechanics of collapse of orogenic belts (2016–2018, Czech Science Foundation)
- Post-collisional plutonism in the south-western Bohemian Massif (2015–2017, Austrian Science Fund)
- Dynamics of Precambrian accretionary wedges and mélanges (2014–2016, Czech Science Foundation)
- Calderas as indicators of thermal-mechanical evolution of subvolcanic magma chambers (2012–2014, Czech Science Foundation)
- The origin of compositional and textural zoning in shallow-level granitoid plutons: a quantitative approach (2011–2013, Czech Science Foundation)
- Relationship between faults and plutons: implications for interactions between tectonic and magmatic processes in magmatic arcs and orogenic belts (2007–2009, Czech Science Foundation)

Are you interested in this expertise?

Please contact CPPT UK

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Experts and their Department

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