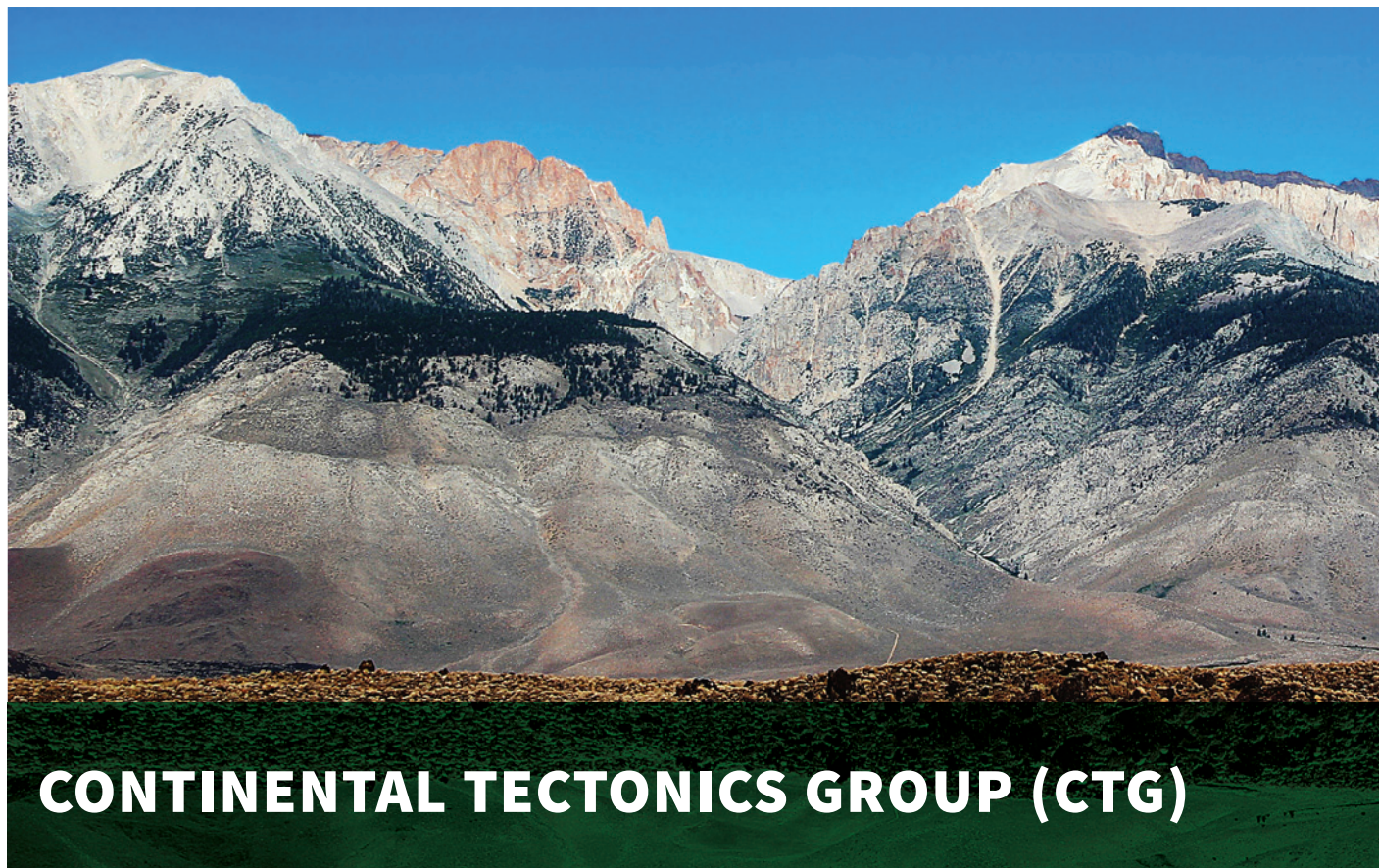**FACULTY OF SCIENCE**
Charles University

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CONTINENTAL TECTONICS GROUP (CTG)

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.

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

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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-L Low-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).

SEE OUR WEBPAGES

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