

Plan Overview

A Data Management Plan created using DMPTool

Title: Structural, deformational, and temporal evolution of the Otu-Pericos shear zone (Northern Andes, Colombia): terrane accretion or arc-related deformation

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Project abstract:

Despite its implications for the Jurassic tectonic configuration of the Northern Andes, the regional-scale Otu-Pericos shear zone in Ecuador and Colombia has been subject to ambiguous interpretations based solely on unrelated rocks found within the blocks it separates. This project aims to understand the deformational history and tectonic significance of the shear zone by characterizing its ductile deformation record, investigating its structural, kinematic, and metamorphic evolution, and establishing the ages of deformation. The research involves fieldwork, microstructural analysis, mineral chemistry, thermobarometry, and geochronology with the aim of gaining insights into the temporal evolution of the shear zone, its connection to metamorphism, and its implications for tectonics and paleogeographic reconstructions of the Northern Andes during the Jurassic.

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Structural, deformational, and temporal evolution of the Otu-Pericos shear zone (Northern Andes, Colombia): terrane accretion or arc-related deformation - Coleta de Dados

This project is intended to generate data from rock samples collected during the fieldwork stage in the Central Cordillera of Colombia. The data includes photographs (outcrops, rock samples, kinematic indicators), microphotographs (mineral assemblages, microstructures, and textural relationships between mineral paragenesis), mineral chemistry, geochemistry, and geochronology via isotopic relationships in specific mineral phases.

The photographs taken during the field stage will be captured using mobile devices such as smartphones and tablets. Microphotographs of thin sections will be acquired via a petrographic microscope coupled with visual acquisition software. Mineral chemical analyses, including chemical profiles and compositional maps, will be obtained using wavelength dispersive spectrometry and backscattered electron imaging. Finally, geochemical and geochronological data will be acquired through X-ray fluorescence (XRF) and laser ablation inductively coupled plasma mass spectrometry (LA-ICP-MS) / laser ablation triple quadrupole inductively coupled plasma (LA-TQ-ICP-MS), respectively. The choice of each mass spectrometer depends on the specific isotopic system being studied. Moreover, the quality of the acquired data will be ensured through the checking of reference materials
