



## **The metamorphic evolution of the Kathmandu Nappe area**

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The Kathmandu Nappe area in central Nepal was initially discovered in the beginning of the 70s and mapped some years later. While the first investigation showed that the Kathmandu Nappe belonged to the less metamorphosed sedimentary and volcanic formations, later findings proved the Kathmandu Nappe to have a distinct lithology and stratigraphy with a separate metamorphic evolution. The aim of this project is to further investigate the geologic evolution of the area.

The proposed method for investigation is to perform a detailed geological mapping of the area, collect rock samples based on the mapped information and analyse the samples using optical microscope analysis and zircon crystal morphology analysis.

The Kathmandu Nappe forms a huge N100° synclinorium, divided into the lower Bhimpedi group, the Phulchauki group and the Cambrian-Ordovician granites. Detailed geological maps will be generated by focusing on the contact between the metasediment and Palung-, Ipa-, and Agragranite bodies.

There are two expected findings. For one, the granite is expected to be younger than the metasediment, suggesting them to be caused by two different tectonic events. This would mean that the granite shows a clear intrusive relation with many pre-existing faults, and, therefore, that it was little affected by faulting. To prove or discard this, a detailed geological mapping will be used.

For two, the granite is expected to have a crustal origin. This would mean that the magma generation probably occurred through anatexis of continental crust. To prove or discard this, the origin of the granite bodies will be identified and compared using optical microscope analysis and zircon crystal morphology.