



First (U-Th)/He ages from the peneplain forming granitoids of Tibetan Plateau, near Nam Co

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Peneplains form a very distinct and widespread geomorphological feature of the Tibetan Plateau. In Central Tibet, north of the lake Nam Co peneplains predominantly are graven into Jurassic and Cretaceous granitic intrusions. Characteristic for these geomorphological features are the complete flat landscape at an altitude of about 5100 m. Some of them are well preserved, while others are decayed to corestone (woolsack) and form hilly landscapes.

We aim to date the tectonic events and exhumation periods pre – dating the formation of peneplains by thermochronological methods. Thus sampling of a 6,000 square km wide area was performed and granitoid, volcanic and sediment samples were taken. Further samples were taken from the intrusions at different levels.

The apatite crystals were separated from the rock samples and inclusion free grains were carefully selected for (U – Th)/He thermochronology by classical methods. As first step He was extracted from each grain separately by laser heating and the gas amount was measured by a Hiden triple – filter quadrupole mass spectrometer. Subsequently the grains were dissolved in spiked nitric acid and the U, Th and Sm contents was measured by ICP – MS.

The first (U – Th)/He ages cluster around Middle Eocene. We suppose that these thermochronological data reflect a Tertiary thermotectonical event. This event is probably connected to erosion and planation of the granite surface and to the deposition of siliciclastic sediments situated close to the currently exhumed peneplains.