

Summary of the internship in the “Laboratoire National des Nucléides Cosmogéniques” (LN2C) in Aix-en-Provence (France)

Between the 6th November and the 22nd December 2017, I completed an internship in the “Laboratoire National des Nucléides Cosmogéniques” (LN2C) within the Geoscience Research Centre “Centre Européen de la Recherche et d’Enseignement des Geosciences de l’Environnement” (CEREGE) in Aix-en-Provence. The laboratory consists of facilities for the preparation of the samples to be analysed and the ASTER (Accélérateur pour les Sciences de la Terre, Environnement, Risques) accelerator mass spectrometer (AMS) which allows for determining cosmogenic nuclide concentrations (e.g. ^{10}Be). The measurements are used for various applications in geosciences, as dating of glacial landforms or the determination of denudation rates.

The main aim of my internship was to process rock samples from moraine boulders from the southern French Alps for measurements of their ^{10}Be concentrations in the ASTER AMS facility. The preparation of the samples included the magnetic separation, the purification of quartz with hypochloric, hexafluorosilic and hydrofluoric acid, chromatography with cationic and anionic exchange resins, as well as precipitation stages. The results will be used in my master thesis about Late Glacial and Holocene glacier variations in the Drac Blanc catchment (French Alps).

During the internship, I also attended several presentations about different applications of the cosmogenic nuclides, as the determination of denudation rates in the Taiwanese mountain belt or moraine cosmic ray exposure dating in Greece. Overall, the internship enabled me to perform the preparation of samples for ^{10}Be dating and to deepen my knowledge about the use of cosmogenic nuclides in geosciences.