

## **Carbon in Large Igneous Province basalts**

*(Proposer: Prof. Andrea Marzoli)*

Mass extinctions and major global climate change events are linked to carbon-cycle perturbations recorded by C stable isotopic excursions (CIE) in marine and terrestrial sediments. These events are synchronous and possibly caused by eruption of enormous quantities of basaltic magmas forming Large Igneous Provinces (LIPs). However, to date, there is essentially no information available on the C content and C isotopic composition of LIP basalts. The goal of this project is thus to try developing viable analytical protocols to measure the C content and isotopes in ancient basalts knowing that: 1) C is largely degassed prior to eruption, leaving very little pristine C in basaltic whole-rocks; 2) secondary C of carbonatic or organic origin may contaminate the rocks. The PhD candidate will not start from zero, since we accumulated some experience on these topics during the last 2-3 years. She/he will take advantage of in-house analytical facilities and will spend a considerable amount of time also in laboratories abroad.

This project will be developed in collaboration with Prof. Preto (for stable isotope analyses at Padova), and the Universities of Leeds (UK) and La Jolla (USA).

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