

A Middle Jurassic age for ophiolitic fragments in the Queyras area (Western Alps)

KLAESSENS D.¹, BOSCH D.¹, CABY, R.¹, BRUGUIER O.¹

¹Géosciences Montpellier, CNRS-UMR 5243, University of Montpellier, Montpellier, France (*bruguier@gm.univ-montp2.fr).

Remnants of oceanic materials occur in most orogenic belts worldwide and their study potentially bring important insights on the precollisional history. In the Queyras area (Western Alps), Tethyan ophiolitic fragments were interpreted as mantle rocks and gabbros exhumed during the formation of oceanic core complexes at slow spreading centers (*Lagabrielle et al., 2015*). In this study, we present laser ablation results (U-Pb and trace elements) on zircons from a metagabbro and from a gabbroic boulder in a metabreccia of the Cascavelier body. Analysed zircons from the metagabbro correspond to euhedral whole grains with sharp terminations or to fragments. They have chondrite-normalized REE patterns showing low La contents, prominent positive Ce anomalies and weak negative Eu anomalies. The Th/U ratios are elevated (0.3-0.6) and their Σ REE content correlates with the P content suggesting the incorporation of REE in the zircon lattice reflects a “xenotime” substitution. These characteristics are typical of magmatically grown zircon from a magma which was previously depleted in Eu due to plagioclase fractionation. U-Pb analyses provide a $^{206}\text{Pb}/^{238}\text{U}$ age of 167.2 ± 1.8 Ma interpreted as dating crystallisation of the gabbroic magma. Zircons from the metabreccia sample are euhedral and were analysed in-situ on a thick section. The smaller size of the grains (less than $100\mu\text{m}$) and their small number did not allow REE elements to be analysed. Analysed grains have similar Th/U ratios (0.3-0.6) than the metagabbro but much lower U and Pb* contents (4-50ppm and 0.2-1.5ppm respectively). U-Pb analyses provide an age of 171.3 ± 7.2 Ma, within errors identical to that of the metagabbro. These Bajocian/Bathonian ages indicate that ophiolitic fragments preserved in the Queyras area are related to the Ligurian-Piemontese Tethys domain. These results are compared with those known from other Tethys fragments preserved in the Alps and Apennines.