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MESOZOIC IGNEOUS EVENT INTO THE BALDISSERO MANTLE PERIDOTITE (IVREA-VERBANO ZONE, NW ITALY) ?

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A suite of diorite dykes occurring into the Baldissero mantle peridotite (Southern Ivrea-Verbano Zone) shows an unusual geochemistry, characterised by high mg# values in bulk rock and mineral phases and a positive correlation of this parameter with incompatible element concentration. The dykes, in spite of their fine-grained texture, contain large amounts of cumulus phases. Their geochemical characteristics may be explained by melt flow, accompanied by crystallisation and reaction with the ambient peridotite, of a hydrous basaltic melt. The least evolved melts in this process are those that have the lowest incompatible element concentration and mg#. Reactions with the ambient peridotite are very limited and consists of olivine dissolution and orthopyroxene crystallisation, so that an orthopyroxenite (orthopyroxene, spinel, minor olivine and clinopyroxene) rim, less than 0.5 cm thick, may appear at the contact. Very smooth geochemical gradients, which extend for a few cm inside the ambient peridotite, may be present. The age of dyke intrusion is currently constrained by: a) a two point mineral (plagioclase + clinopyroxene) best fit calculated from Sm-Nd isotopic data which yields a slope corresponding to an age of 180 ± 26 Ma, with a $\text{Nd}_{\text{i}} = 0.512804$ and $\text{varepsilon}_{\text{Nd}_{\text{i}}} = 7.8$ (Obermiller, 1994); b) Re-Os model ages (Re depletion model age) between 140 and 190 Ma calculated on whole rock samples of the ambient peridotite. Other isotopic determinations are in progress. More indications of Mesozoic ages, obtained in other parts of the Ivrea-Verbano Zone, are reported in Lu et al. (1997) and Peressini et al. (2004). The presence of remarkable episodes of Mesozoic magmatism in the Ivrea-Verbano

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Zone furnishes new constraints for the understanding the post-Variscan geodynamic evolution of the Europa-Adria lithosphere.

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