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Petrological characteristics of the Finero Phlogopite-Peridotite Massif, Italy

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At subduction zone, hydrous silica-rich fluids/melts derived from subducting lithosphere are expected to be interacting extensively with the overlying mantle, resulting in arc magmatism and/or enrichment of fluid mobile elements (LILE) in the mantle as a source for the following arc magmatism. Details of metasomatic processes in the mantle wedge are crucial to understand the development of subduction zone through the time, and are, however, sill not understood yet. The Finero Phlogopite-Peridotite Massif in the Western Italian Alps is well known as a highly metasomatized peridotite massif, which is characterized by abundant metasomatic minerals, such as phlogopite, amphibole and apatite (e.g., Zanetti et al., Contrib. Mineral. Petrol., 134, 107-122; Morishita et al., 2008 Chem. Geol.25, 99-111). Petrological characteristics of the Finero massif have never been well described yet. We present our recent progresses based on filed works, especially focusing on metasomatic silica enrichment, the presence of diverse metasomatic agents, antigorite-talc formation and puseodotachylyte-like rocks.

Keywords: fluid, peridotite, metasomatism, Finero massif