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ABSTRACT BOOK

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SIMP-SGI-SOGEI 2019

Il tempo del pianeta Terra
e il tempo dell'uomo:
Le geoscienze fra passato e futuro



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Petrological features of clinopyroxene in lava flows from Cima Pape (Dolomitic Area, Southern Alps): how to unravel the feeding system of a Middle Triassic volcano

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The Cima Pape volcano-plutonic complex, together with Mt. Monzoni and Predazzo ones, represents one of the main expression of the Middle Triassic magmatic event that occurred in the Dolomitic Area (Southern Alps). The intrusive portion is constituted by gabbroic to monzodioritic products, whereas the overlying volcanites are basaltic to trachyandesitic lavas and pillow breccias. The volcanic products have a porphyritic texture characterized by large amounts of clinopyroxene, plagioclase, and (less abundant) olivine phenocrysts embedded in a microcrystalline matrix. Most clinopyroxenes (up to 3 mm in size) have generally homogeneous or simple-zoned texture, with Mg# [$\text{MgO}/(\text{MgO}+\text{FeO}_{\text{tot}})$ mol%] ranging between 71 and 77. Some of them show a peculiar texture, characterized by an intermediate overgrowth with high Mg# (80-84, up to 90), high Cr_2O_3 (up to 1.0 wt%) and low TiO_2 (down to 0.1 wt%) contents, likely resulting from a mixing within the feeding system, where new mafic input of magma could have interacted with differentiated batches. An evaluation of the textural and compositional features of clinopyroxene in the volcanics and their plutonic counterparts enabled us to speculate about the main chemical and physical processes acting in the feeding systems during the Middle Triassic magmatic event in this part of the Southern Alps.

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