



Permian volcanic and volcanoclastic sequences in the Varese area (Northern Italy): geometries, emplacement mechanisms and sediment supply of a volcanically controlled continental environment.

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The Permian volcanism is represented in Italy by different volcanic/volcanoclastic sequences presently spread from the Alps to the Sardinia Island. This work focuses on a volcanic suite cropping out nearby the town of Varese (Northern Italy – Southern Alps). For the first time, a detailed stratigraphic fieldwork reveals the geometrical relationship existing among rhyolitic and andesitic units (i.e. rheomorphic lava flows and associated breccia deposits, ignimbrites, block and ash flows, debris avalanche flows), generated by successive eruption events, and volcanoclastic sequences prograding into a proximal fluvial environment. Detailed sedimentological analyses (i.e. gravel-size clast counts, image and petrographic analyses) are used to estimate the contribution of the volcanic events to the infilling of the sedimentary basin. As preliminary results, the geometrical distribution of the deposits seems to indicate a proximity to a silicic eruptive center, whereas more intermediate events were probably fed by more distal centers. At the same time, the progressive evolution of the nature of volcanoclastic sediments, from silicic and monogenetic to polygenetic, indicates that, at the very early stage of the development of the fluvial system, the sediment supply was probably limited to the rework of loose silicic deposits, whereas changing in the drainage system occurred during the progressive aggradation of the volcanic sequences in the surrounding areas.