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Pragian to Famennian depositional evolution of the M. Pizzul area (Carnic Alps, Italy): preliminary results

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The Carnic Alps represents the non- to low-grade metamorphic portion of the Variscan substratum of the Alps (VAI 1976, SCHÖNLAUB 1979). The whole "pre-flysch" Variscan succession of the Carnic Alps is thought to have developed in correspondence of a mainly carbonate platform not deeper than few hundred meters. Up to the Pragian, the basin physiography can be roughly schematized as a ramp-type, while from the Pragian to Famennian differential carbonate growth controlled by tectonics led to a differentiation between shallow water facies, high-density and low density resedimented gravitative driven deposits and deeper water facies.

The study area of the M. Pizzul is located in the central part of the Carnic Alps, south of Cason di Lanza Pass and east of Mt. Zermula (Fig. 1). The transition between resedimented gravitative deposits and deeper water facies is here exposed. The entire succession is overturned and disrupted by Variscan as well Alpine faults and thrusts, but the stratigraphic succession is nevertheless well preserved (Fig. 1). The shallow water body that fed the gravitative deposits is now thrusted on top of the deeper-water facies though a roughly E-W trending top to the south thrust of Alpine age (VENTURINI 1990), while the most proximal part of the resedimented facies was subjected to tectonic elision, with the exception of a single outcrop at the Forca di Lanza (Fig. 1).

The transition between distal resedimented facies and deeper water facies – which corresponds here to the Findenig, Hoher Trieb and Pal Grande Formations – represents the most obvious place to observe the response of the depositional systems to the fluctuations of the allogenic controls.

The Findenig Formation (Pragian/Emsian) consists mainly of purple red centimetric thick layers, interpreted as pelagic deposits. Hoher Trieb Formation (Eifelian/Frasnian) consists of intercalations between light gray metric thick silicified corals bearing breccia levels and centimetric to decimetric normally graded thick levels of medium gray grainstone and packstone (and locally sandstone), purple red to gray mudstone to wackestone and black radiolarites to pelites. We interpret the silicified corals bearing breccia levels as high-density gravity driven flows, the grainstone to packstone (and sandstone) as turbiditc and/or storm layers and the mudstone-packstone and radiolarite-pelite layers as pelagic deposits. The Pal Grande Formation consists of light gray to purple red centimetric thick mudstone to wackestone layers interpreted as pelagic deposits.

The overall succession appears to show different hierarchy of cyclic controls, which suggest a possible climatic control on at least part of the depositional framework.

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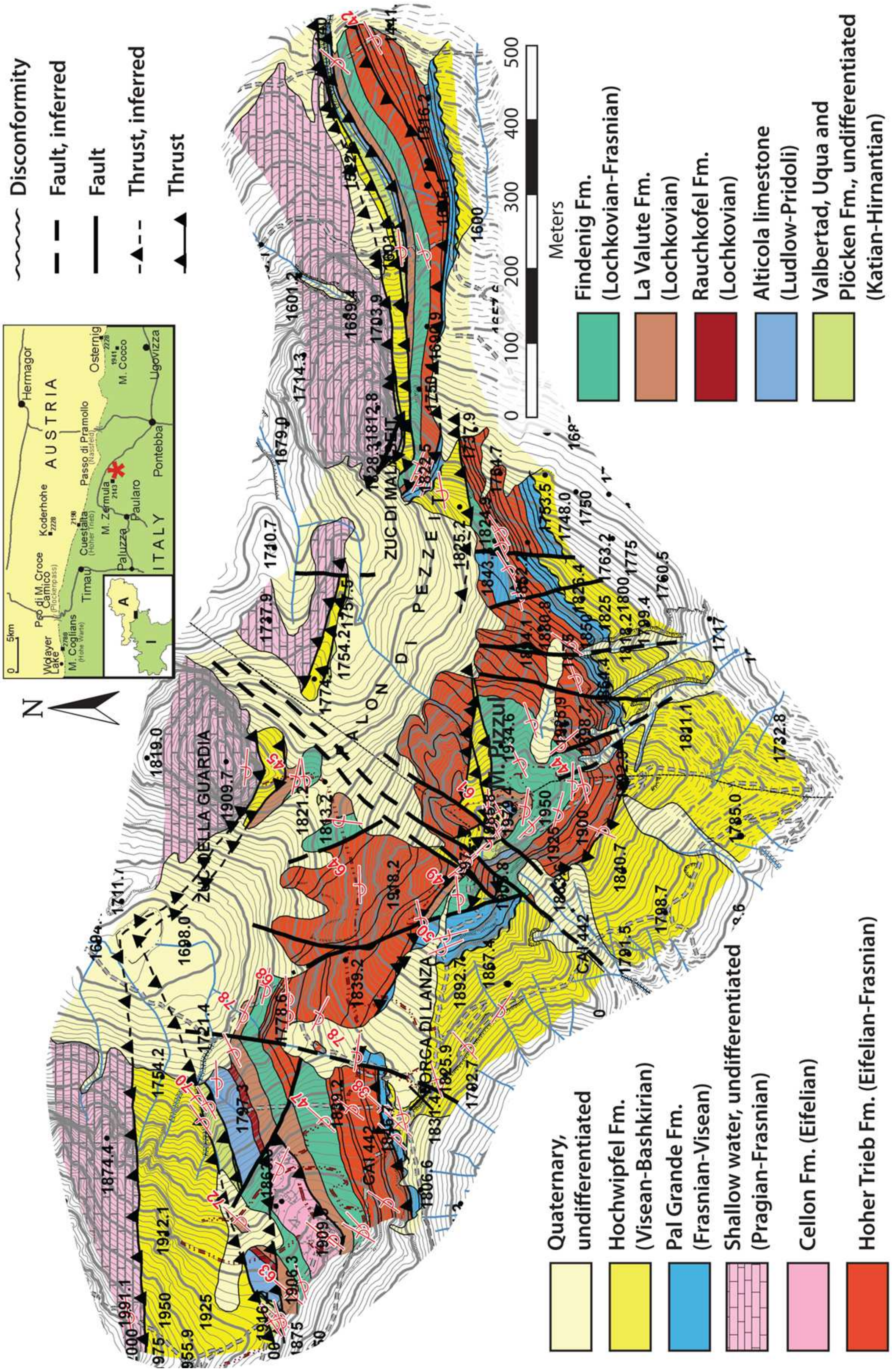

Fig. 1: Geological map of the M. Pizzul area