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Abstract title

MESOZOIC EXTENSION AT THE WESTERN MARGIN OF THE SOUTHERN ALPS (NORTHERN PIEDMONT, ITALY)

Authors

FANTONI ROBERTO¹, DECARLIS ALESSANDRO²

presenter's e-mail: roberto.fantoni@agip.it

1 - ENI - E & P Division, Via Emilia 1, 20097 S. Donato Milanese, Italy

2 - Dipartimento di Scienze della Terra, Università di Pavia, via Ferrata 1, 27100 Pavia, Italy

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Abstract

The Mesozoic sedimentary succession, deposited on top of the widespread volcanics of the Permian age, in the western Southern Alps is extremely discontinuous.

The alpine erosion has completely removed the younger sedimentary covers, while remnants of the older ones are restricted to outcrops of diminished extension.

At Arona, Maggiore, Valduggia and Crevacuore Triassic successions are exclusively present; at M. Fenera and Sostegno Liassic successions are also present, while at Gozzano and Inverio the Jurassic units overlay the Permian volcanic units directly. Here a revision of the outcropping formations is proposed aimed to the reconstruction of the Mesozoic extensional architecture. The extensional faults, with an average strike of 150°, that outline the outcrops of Maggiore, M. Fenera and Sostegno, are here suggested as responsible of the definition, since the Middle Liassic, of the Gozzano high and of the break up of the western basins of Fenera-Sostegno; the first one accommodate a gapped and condensed succession; the second a relatively thick Jurassic successions with basinal evolution.

A comparable extensional framework has been recognized on the seismic lines acquired within the hydrocarbons exploration on the southward extension of this structural unit (in the subsurface of the north-western Po Plain). The structural framework of the whole area is characterized by a liassic extension and by the presence of a widespread and not hierarchical faults system. The Permian magmatism, that affected the crust structure at different depths (volcanics, granite of the Serie dei Laghi, basic stratified bodies of the Ivrea-Verbano Zone), is here suggested as responsible for these structural features. A comparable tectonic frame is recognized in the Trento Plateau, an area also affected during the Permian by extensive magmatic activity.