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The influence of transform fault subduction in the architecture of the Ligurian subduction complex (Northern Apennines, Italy)

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The Late Cretaceous-Middle Eocene Ligurian subduction complex resulted from the subduction of the Ligurian Ocean. This ocean had been formed in the Jurassic due to the divergence between Adria and Europe and represents the westernmost portion of the Tethys Ocean. The Ligurian Ocean was characterised by a number of transform faults, as documented by palinspastic renconstructions. The subduction of oceanic lithosphere characterised by transform faults and the oblique convergence, as hypothesised by many authors, likely resulted in a reactivation of the former in a transpressional regime and in a partition of the deformation. Evidence of strain partitioning are coming, for example, from folds and thrusts indicating a tectonic transport perpendicular to the principal NE tectonic vergence of the Apennines. This character is particularly evident along some important transversal tectonic lines of Northern Apennine (e.g. Livorno – Sillaro, Piombino – Faenza and Arbia Val Marecchia Lines). Moreover, with the beginning of the ensialic phase of the orogenesis, the transversal structures which lead the piling up of the LU in this sector of the Apennines are likely to have been inherited as passive elements, which played as interchange among the sectors of the chain with different movement rate. Here we present data coming from stratigraphical and structural analyses collected along these transversal lines.