matics of the second stage faults and their transformation in different parts of the region. Synchronous with this deformation was squeezing out of the rock material in the lateral direction to form the "palm-tree" structures (Oxman and Prokopiev 1996).

At the final stage of Late Mesozoic development of the region (second half of Neocomian) in south-eastern and central segments of the collision belt faults with strike-slip and thrust-strike-slip kinematics were formed, having had as a whole similar stretches with previously formed structures and thrust-strike-slip dislocations in north-eastern part of the region. Deformation data seems to be connected with the closing Anyui–Angayucham ocean, located north-eastwards of the examined region and subsequent collision of Novosibirsk–Chukotka microcontinent with newly formed Siberian continental margin (Parfenov 1991, Sokolov et. al. 1998, 2000)

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Lateral variations of deformation and exhumation modes across the "Sillaro Line" in the Northern Apennines

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The late Pleistocene and Recent tectonics in the Emilian Northern Apennines is controlled by normal faults, as firstly recognized for the Bologna area (Bertotti et al. 1997). The main features consist of a SW dipping master fault, located close to the foothills, and some antithetic faults more to the South, separating grabens occupied by the uppermost unit (Epiligurian deposits) and horsts, where the lowermost unit occur (the Tuscan unit).The most prominent horst correspond to the watershed (Page 1963). Moving along strike toward the Romagna Northern Apennines an important change in the structural style occur. In the western Romagna, the master fault is confined south of the watershed (Mugello fault) and the whole exteral Apennines participate to the footwall uplift. This lateral variation coincide to the so-called Sillaro Line, a longitudinal flexure allowing major subsidence to the West (Emilia Apennines) during Miocene to Pliocene.

The passage from a compressional to an extensional regime occurred during the early to middle Pleistocene. Backtracking the first horizon clearly sealing the compressional structures (the Sabbie di Imola) up to the master fault produces a reliable assessment of the pre-extensional topography and hence of the extension-related exhumation. This approach has been compared to the maximum exhumation reconstructed by apatite fission track carried out in the Romagna Apennines (Zattin 1999). The Emilia exhumation profile has been reconstructed by means of geological data integrated with vitrinite profiles of some deep wells.

The final result has been projected over a topographic map. There is a clear correspondance between the exhumation rates and the topography, the highest Apennines being characterized by a 3 mm/year of exhumation. In the northern Apennines these rates doubled passing from the Pliocene thrust-related (maximum 1.5 mm/year) to the extension-related exhumation. Trace of this change can be found in the deeply incised meanders of the Romagna rivers (e.g. the Santerno river). Incised meanders characterize also the thalweg of some rivers crossing uplifted blocks in the Emilia Apennines (e.g., the Scascoli gorge in the Savena river). Wide terraced intramontane valleys characterize the structural depressed areas, whereas the uplifting blocks of the pedeapennine border show narrow gullies.

Lateral changes of extensional style strongly control the Sillaro river, whose intramontane valley is deflected by the delay ramps connecting the two differently deformed segments.

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