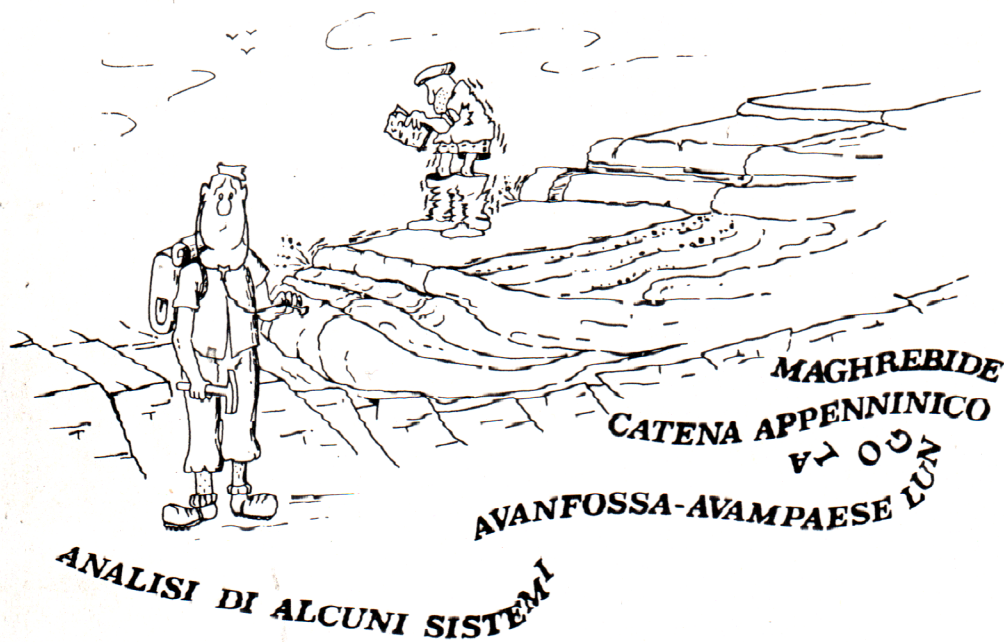


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POST-TORTONIAN MOUNTAIN BUILDING IN THE
APENNINES. THE RÔLE OF THE PASSIVE SINKING
OF A RELIC LITHOSPHERIC SLAB

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Structural evolution of the Apennines before the opening of the Tyrrhenian Sea may be entirely described following classical plate-tectonics schemes: Europe-Africa convergence, consumption of the Piedmontese Ligurian Ocean, continent-continent collision, subduction of the Adriatic lithosphere beneath Corsica Sardinia, counterclockwise rotation of the latter still continuing the Adriatic subduction.

The Apenninic nappes can be therefore considered as a series of pells detached from the subducting lithosphere, orogenically transported in the opposite direction to the slab sinking.

In Late Tortonian times, extensional conditions established in the western part of the mountain chain and the Tyrrhenian Sea began opening. Rifting proceeded eastwards and southeastwards, in accordance with a possible divergence of the Adriatic lithosphere from the Corsica Sardinia block.

Nevertheless folding and thrusting continued at the outer margin of the Apennines, revealing the persistence of a compressional stress-field.

The kinematic evolution of the whole system may be described, from Late Tortonian times to the Present, as a time-space migration of the compressional fronts closely pursued by the distensional ones.

Aim of this paper is to describe the geometry and the timing of the compressive deformation, to discuss the possible mechanisms, and finally to suggest a tentative model able to justify the coexistence, within a small area, of apparently incompatible stress-fields and geodynamic processes.

The proposed model considers rifting of the Tyrrhenian area, folding and thrusting along the outer margin of the Apennines and time-space migration of the thrust belt-foredeep system from Late Tortonian times to the Present as different products of a unique major geodynamic process consisting of passive gravitational sinking of a relic, fragmented slab of the Po-Adriatic-Ionian lithosphere.

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