Geophysical Research Abstracts, Vol. 7, 08977, 2005 SRef-ID: 1607-7962/gra/EGU05-A-08977 © European Geosciences Union 2005



Quantitative analysis of the Apennines subduction system

F. Lenci (1), D. Scrocca(2), S. Bigi (1), E. Carminati (1), C. Doglioni (1)

(1) Dipartimento di Scienze della Terra

Università degli Studi di Roma "La Sapienza"

P.le Aldo Moro 5

00185 Roma (Italy)

(2) Istituto di Geologia Ambientale e Geoingegneria

C.N.R., Roma (Italy)

The Apennines are a complex subduction system, active since Late-Tortonian time. The peculiar geodynamic scenario in which the Apennines developed, such as the Western Mediterranean, and a composite down-going lithosphere with a rather articulated palaeogeography contributed to draw a nearly unique laboratory to study the interactions between nature and architecture of the underthrusting plate and related accretionary wedge.

The Apennines subduction system is here analysed describing the following basic features: 1) shape and inclination of the regional monocline, both in foreland and below the accretionary wedge front; 2) the depth of the basal décollement and the volumes of rocks accreted in the wedge; 3) the location of the frontal thrust with respect to the regional monocline; 4) the location of the most internal active thrust (out-of-sequence), and the distance relative to the frontal one; and 5) the wedge propagation rates toward the foreland.

The present day geometry of the regional monocline in the Northern, Central and Southern Apennines has been reconstructed by means of seismic reflection profiles and geological balanced cross-sections. A 3D visualization of the monocline morphology is here presented. A comparative analysis between its dip and width of the active wedge is also discussed.