



Kinematics of active thrusting at the Apulian-Ionian plate boundary in Southern Albania

K. Decker (1), S. Aust (2), A. Ballauri (3) and C. Clebsch (3)

(1) Department of Geodynamics and Sedimentology, University of Vienna, Austria (kurt.decker@univie.ac.at) (2) OMV (Albanien) Exploration GmbH, Tirana, Albania (3) OMV Exploration & Production GmbH, Vienna, Austria

Kinematic analyses of Pliocene to Holocene folding and thrusting at the Apulian-Ionian contact in southern Albania (Vlora region; Sazan Island, Karaburun Peninsula and Tragjasi range) show excellent evidence for active WSW- to SW-directed thrusting with a remarkable structural complexity including tear faults / lateral ramps, reactivated normal faults, blind thrusts, emergent thrusts and backthrusts. The description of Miocene to Recent kinematics of the fold-thrust belt, its relation to Mediterranean plate tectonics, and the integration of structural data with earthquake data are the main topics of this contribution. Data include fault slip analyses obtained from surface outcrops, tectonic geomorphology data such as uplifted paleo-shorelines along Karaburun peninsula, and 2D seismic covering the frontal thrusts of the Albanide ranges.

Structural field data and offshore seismic lines prove Pliocene to Pleistocene thrust geometries, which are severely complicated by lateral ramps and tear faults in all structural levels of the Apulian and Ionian units. Structural data are presented from the Cika and Tragjasi thrust sheet (Ionian unit), Pliocene imbricates below the Tragjasi, and the Apulian unit (Sazan tear fault, South Karaburun transfer zone). The latter structures are of particular importance as they delimit regions of distinct fold-thrust style. The NE-striking Sazan tear fault separates a northern area of low thrust shortening in the Apulian unit from an area south of it, which shows significantly higher shortening. The northern area is characterized by blind thrusts with a main detachment above the Apulian carbonates as well as by minor inversion of Oligocene to Burdigalian grabens and half-grabens. Fold-thrust structures south of the lateral ramp include emergent thrusts, backthrusts and thrust wedges with a main detachment below the Apulian carbonates. Apulian thrusting both north and south of the Sazan fault is dated as (Upper)

Pliocene to Pleistocene and Holocene by the evidence of growth strata and by uplifted paleo-shorelines.

The importance of NE-striking dextral tear faults in active shortening and the partitioning into strike-slip faulting and (S)SW-directed fold-thrust shortening is regarded to result from the generally oblique convergence between the Adriatic plate and the Albanide fold-thrust belt. Tear faults serve to accommodate different amounts of shortening along the Adriatic plate boundary, which result from the counter-clockwise rotation of the Adriatic plate.