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Tertiary Thrust Belt Evolution Of Southern Albania

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The southern Albania thrust belt comprises Mesozoic-Eocene carbonate sequences incorporated into three major Tertiary thrust sheets verging towards the Apulia foreland in the southwest. The problem of the structural evolution has been previously approached through a hypothesis of orthogonal thin-skinned thrusting controlled by a differential areal extent of Permo-Triassic evaporates.

This study uses the interpretation of several seismic profiles to address questions such as those relating to the subsurface geometric patterns of the thrust sheets, the kinematic framework the evaporates operated in, the role of the pre-existing faults and the timing of the evolution.

The interpretation demonstrates that significant along-strike changes characterize the subsurface geometry of the thrust sheets. The Permo-Triassic evaporates facilitated their buttressing against a buffer zone in the Apulian foreland primarily within an orthogonal compressional regime. Regional clockwise rotation about a pivot point to the north may have provided a transpressional component along the thrusts. Pre-existing normal faults played a significant role on thrusting and accommodation of the strain partitioning. The main structural events included thin-skinned thrusting during Oligocene-Aquitaniene, formation of a buffer zone in the foreland during the Burdigalian and subsequent thrust buttressing during the Miocene. Post-Pliocene deformation occurs in the foredeep basin.

The results may have significant implications on the study of the families of structures and the driving forces of their deformation in foreland fold and thrust belts.

