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Tectonic evolution of accretion- and collision-related structures in southern Iran

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In the Afro-Arabian-Iranian convergence zone, the Zagros Suture Zone represents a collage of different units that record the closure of the Neo-Tethys Ocean from Late Cretaceous to Tertiary time**.** Tectonic evolution of Cretaceous to Tertiary accretion- and collision-related Structures in southwestern Iran is presented in this paper. These structures have investigated by means of structural analysis and metamorphic petrology. The results of this work have revealed new aspects of the tectonic development of the northeastern margin of the Afro-Arabian plate. The Neyriz region of southwestern Iran includes components, which record various tectonic scenarios, i.e. oceanic subduction, accretion, continental collision, strike-slip fault displacement, thrust movement and HP-LT metamorphic rocks exhumation. The main lithotectonic components of the study area comprise of Neyriz ophiolite, Hasan Abad mélange with mudstone-matrix and radiolarian cherts, eclogite and blueschist rocks that are distributed between the southwestern margin of the Iranian microcontinents and the northeastern margins of the Afro-Arabian plate. Subduction, accretion and collision processes have created these structures from Late-Cretaceous to present. Oceanic plate subduction caused arc volcanism and formed an accretionary wedge. Accretion-related structures are characterized by the presence of mélange and radiolarian chert underlain by pillow basalt and Neyriz ophiolite. Collision also has exhumed high and very high P/T metamorphic rocks in the study area. Structural, microstructural and kinematic studies in the Neyriz area indicate the interrelation of thrusting and wrenching in a transpressional deformed wedge. Thrusting and dextral wrenching cause to rearrangement of these tectonic units along the Zagros Suture Zone in the Cenozoic era when collision of Afro-Arabian and Iranian continental blocks occurred in the Zagros Orogen.