



Tectonomagmatic Evolution of the Neo - Tethyan Region in the Iranian Continental Margin

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The tectonic history of Neo - Tethyan realm in Iran began with the rifting of the Central Iranian Block (CIB) separated from Arabia and Gondwana during Late Permian - Early Triassic time. This realm travelled to the north to creation of the Neo-Tethyan oceanic lithosphere. The subduction of the Neo-Tethys could start to the south of the Central Iranian Block at Late Triassic to Plio-Quaternary time. The subduction of the Neo - Tethyan ocean beneath the active continental margin of the Iranian block was established by arc magmatism and back - arc spreading. These magmatic activities are marked from SW to NE by the presence of: calc-alkaline arc magmatism from Late Triassic to Late Jurassic in the Sanandaj-Sirjan Zone (SSZ), back - arc spreading with Late Cretaceous in the Esfandagheh Colour Melange Zone (ECMZ), back-arc spreading with Late Cretaceous - Palaeocene Nain-Baft Ophiolitic Belt (NBOB) and calc-alkaline arc magmatism from Eocene to Plio-Quaternary in the Urumieh-Dokhtar Magmatic Zone (UDMZ).

Urumieh-Dokhtar magmatic zone has been considered as a place for the main magmatic activities in the Central Iranian continent in the Cenozoic age. This magmatic arc is situated to the North of the Mesozoic arc of the Sanandaj-Sirjan zone and the back-arc basin of the Central Iranian Block of Cretaceous age. During Oligocene-Miocene time the magmatic activity favored to alkaline magmatism. Geochemical data confirm the presence of transtensional tectonic setting along the Urumieh-Dokhtar magmatic zone, opened during Paleogene and early Neogene due to the collision of the Arabia platform and Central Iranian continent.

These magmatic activities are linked to the subduction of the Neo-Tethys to the North below the CIB, followed by the Paleogene collision and continental subduction of the Gondwana (Arabia) beneath the CIB along the Main Zagros Thrust (MZT).

Keywords: Neo - Tethys; Gondwana; Central Iranian Block (CIB); Sanandaj-Sirjan Zone (SSZ); Esfandagheh Colour Melange Zone (ECMZ); Nain-Baft Ophiolitic Belt (NBOB); Urumieh-Dokhtar Magmatic Zone (UDMZ)