



Trace element and SHRIMP data from the Remeshk-Mokhtaramabad and Fannuj-Maskutan ophiolites: Evidence for Late Jurassic subduction in N-Makran, SE Iran

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Ophiolites form in various geotectonic settings and often experience multiple magmatic influences from crystallization of the oceanic lithosphere at the ridge to accretion during obduction. Therefore, ophiolites contain information about a long geodynamic evolution of the area where they occur.

The Remeshk-Mokhtaramabad and Fannuj-Maskutan ophiolites, in northern Makran (Southeast Iran), expose an almost complete sequence of mantle to crustal ultramafic rocks followed by a suite of increasingly differentiated basic rocks. Lavas locally interlayered with Late Cretaceous deep sea sediments range from basaltic to andesitic compositions. Petrography and mineral chemistry (f.e. x_{Cr} of spinel = 0.17- 0.30) suggest a depleted mantle source for the ultramafic and gabbroic rocks and typify a shallow mid-ocean ridge system. Trace element data of the mafic sequence suggest formation above the subducting slab.

Trondhjemites that intrude HBL gabbro and diabase were dated with SHRIMP as Late Jurassic (160.5 ± 1.4 Ma and 156.4 ± 1.7 Ma). Both, the mafic rocks and the later plagioclase-rich dykes show chemistry corresponding to a fore-arc setting. This new information opens the discussion about subduction being already active in the northern Makran during Late Jurassic times.

The ophiolitic sequence was intruded by dykes of peraluminous granite in Albian times (111.4 ± 0.7 Ma), presumably when the ophiolites were already obducted. Hf isotope data from the same zircons will give further information about the magma source at these times.