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Iranshahr Blueschists as Results of Subduction of the Neotethys Inner Makran Oceanic Crust, SE Iran

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The Makran accretionary prism is one of the most extensive subduction accretions on Earth. It is characterized by intense folding, thrust faulting and dislocation of the Cenozoic units consisted of sedimentary, igneous and metamorphic rocks. It is located in the southeast of Iran and southwest of Pakistan. Rock units forming the northern Makran ophiolites are amalgamated as a mélangé. The main rock types are mafic and ultramafic and high pressure metamorphic rocks. The blueschists are associated with serpentinites. Peak metamorphic phases of the northern Makran (Iranshahr area) blueschists are glaucophane, phengite, quartz, ±omphacite, ±zoisite/clinozoisite. Post peak minerals are chlorite, albite and calcic amphibole, formed during

exhumation. Garnet, phengite and epidote are visible within glaucophane as inclusions. The calculated P-T pseudosection yields peak pressure and temperature of 11.5-15 kbar at 400-510 °C. These rocks experienced retrograde metamorphism from blueschist to greenschist facies (350 - 450 °C and 7-8 kbar) during exhumation. A back arc basin was formed due to northward subduction of Neotethys under Eurasia (Lut block). Subduction was followed by collision between the Durkan-Bajgan and Lut blocks, and then exhumation of the high pressure metamorphic rocks in northern Makran. Vast accretion of subducted materials caused southward migration of the offshore.

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