

MESOZOIC BACK-ARC EXTENSION IN THE ACTIVE MARGIN OF THE IRANIAN CONTINENTAL BLOCK: CONSTRAINTS FROM AGE AND GEOCHEMISTRY OF THE MAFIC LAVAS

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ABSTRACT

The Nain-Baft ophiolitic suture, along the active margin of the Central Iranian continental block (the Sanandaj-Sirjan zone) features back-arc extension during the Late Mesozoic. This ophiolitic belt is characterized by occurrence of mafic lavas including pillow lavas, diabasic dikes and layers, massive basaltic lavas and basaltic-andesitic rock fragments in the volcanic breccias. These mafic lavas display both calc-alkaline and island-arc tholeiitic affinities with enrichment in LILE and depletion in HFSE. Conventional K-Ar measurements on amphibole indicate the Middle Cretaceous for the creation and evolution of the Nain-Baft back-arc basins. As a result of oblique subduction of the Tethyan Ocean, a narrow transtensional back-arc basin could start to open along large transcurrent faults in the active margin of the Iranian continental block.