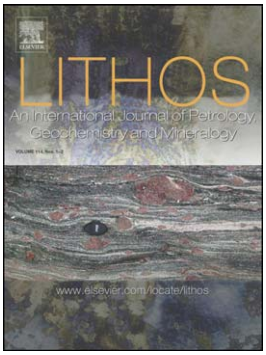

Petrologic and geochemical characterisation of rift-related magmatism at the northernmost Main Ethiopian Rift: Implications for plume-lithosphere interaction and the evolution of rift mantle sources

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Petrologic and geochemical characterisation of rift-related magmatism at the northernmost Main Ethiopian Rift: Implications for plume-lithosphere interaction and the evolution of rift mantle sources

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Abstract

In this paper, we present petrography, K-Ar ages, whole-rock major- and trace-element concentrations, and Sr-Nd-Hf-Pb isotopic ratios of volcanic rocks from Debre Birhan area in the northernmost Main Ethiopian Rift (MER). The K-Ar ages of the mafic series range from 27 to 0.25 Ma, and two felsic rocks yield ages of 0.93 and 0.23 Ma. The mafic volcanics are classified into older and younger series based on their K-Ar ages. The Mg-numbers (Mg# < 60) of both mafic series, along with low Ni and Cr