

# **Geochemical and Nd isotopes of Tachdamt and Bleida formations (Bou-Azzer El-Grara inlier - Central Anti-Atlas - Morocco) Evidence of a Neoproterozoic LIP during the dislocation of Rodinia Supercontinent**

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Based on recent U/Pb on zircon radiometric ages (Bouougri et al., 2020), this study presents new geochemical and Nd isotope data of the igneous rocks of the Neoproterozoic Tachdamt and Bleida formations. The Tonian - Cryogenian formations of Bleida and Tachdamt consist mainly of mafic rocks (basalts and dolerites) associated with rare keratophyres. These rocks display geochemical signatures of passive margin tholeiites with a flat to slightly LREE-enriched REE patterns consistent with an E-MORB type source. Some rocks (keratophyres or dolerites) are more enriched in HREE and LILE, suggesting a previous enrichment of the source. The positive values of  $\epsilon\text{Nd}$  argue for a juvenile source of magmas. The TDM ages range into three age groups for Bleida at 2080, 1600, and 1244 Ma, and from 1990 to 1710 Ma for the Tachdamt formation. The two anorogenic magmatism events are related to an extensional tectonic regime that started during the early stages of Rodinia rifting at 883 Ma, and evolved to a passive continental margin materialized by the Bleida formation between 770 and 700 Ma. These Neoproterozoic magmatic events are the emanations of a large igneous province (LIPs), that accompanied the breakup of the Rodinia supercontinent.