

**THE JEBILET-REHAMNA-
FOURHAL LARGE IGNEOUS
PROVINCE OF 348-340 MA
(MESETA, VARISCAN BELT,
MOROCCO): U-PB
GEOCHRONOLOGY,
GEOCHEMISTRY, AND LINKS
WITH COEVAL MAGMATISM ON
OTHER CRUSTAL BLOCKS.**

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The Mesetian Domain represents a part of the Moroccan Variscan belt. It's separated by the Middle Atlas folded belt into two structural domains: the Eastern and the Western Meseta. The latter comprises the basins of Jebilets, Rehamna and Fourhal (Central Hercynian Massif of Morocco) which show important similarities of tectono-sedimentary evolution during Early Carboniferous. Their deposits record large instabilities and disorganization with enormous thickness and lithological variations caused by syn-sedimentary tectonic movements. Meanwhile, tilted tectonic blocks affect the basement of these basins, controlled by bordering transfer faults. These basins have recognized magmatic activities during the Carboniferous period similarly to other areas in Morocco. These magmatic rocks, of mantle origin and of tholeiitic to transitional affinity, constitute a magmatic province mainly of gabbroic intrusions, mafic sills and dykes, and basaltic lavas, associated to subordinate layered ultramafic intrusions and felsic volcanic/intrusive rocks. Based on U-Pb sensitive high-resolution ion microprobe (SHRIMP) and laser ablation-inductively coupled plasma-mass spectrometry (LA-ICP-MS) on zircon, 6 new ages are obtained from various rocks in this province. These new ages combined to the previously obtained U-Pb ages, indicate that the magmatism occurring between 349 and 340 Ma is coeval with the Eastern Meseta volcanism in northeastern Morocco. The opening of the Jebilet basin would be linked to an East-West and a North-South major strike-slip faults, as suggested in other basins of the Western Meseta: Sidi Bettache, Central Morocco, Rehamna and Guemassa. Considering the importance of these strike-slip faults, we can link the extension of the Western Meseta magmatism to an opening (extension) in a pull-apart system according to strike-slip faults. These magmatic rocks show a remarkable age similarity with the Tazzekka-Debdou-Mekkam igneous rocks in

Eastern Meseta, the likely 345-340 Ma Southern Vosges magmatism and other equivalents such as 353-346 Ma St. Jean du Doigt bimodal layered intrusion (Brittany, France), with all likely linked to the tectonic reconstruction of northwestern Gondwana ca. 350 Ma ago. These magmatic rocks may represent the erosional and/or deformational remnants of a large igneous province, which we call the Jebilets-Rehamna-Fourhal LIP.