



First U/Pb detrital zircon age populations from the Eastern Variscan Moroccan Meseta

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The southernmost part of the Late Paleozoic Variscan belt is found in northern Morocco, where the transition to the foreland (West African Craton) is observed in the Anti-Atlas region. To the North, the Moroccan Meseta appears as a Variscan zone presumed to belong to the northern Gondwana margin, with Neoproterozoic to Carboniferous sequences slightly deformed and metamorphosed and no suture-related rocks. Furthermore, a Mesozoic cover unconformably overlies the Paleozoic sequence, thus hindering the reconstruction of the paleogeographic affinity of the different Moroccan Meseta domains in the context of the Paleozoic plate tectonics. In order to decipher the paleogeographic affinity of this piece of the Variscan puzzle, we report here some preliminary geochronological data on detrital zircon populations from the Paleozoic sequences of the Eastern Moroccan Meseta.

Twelve Ordovician-Carboniferous samples of sandstones were collected from Oujda, Debdou-Mekkam, Tazzeka, and Azrou areas. On average, ≈ 120 detrital zircons per sample were separated and dated by LA-ICPMS and SHRIMP U/Pb methods.

All the samples show a significant Ediacaran (≈ 600 Ma) population that can be ascribed to the Cadomian orogeny, with smaller Paleoproterozoic (≈ 2 Ga, Eburnean orogeny) and Neoproterozoic (≈ 2.6 Ga) age peaks. Five samples show a mild Tonian (≈ 1 Ga) age peak, which is a bit more prominent in two samples from the Tazzeka area (24-31%). This Tonian population might be sourced from Avalonian, Baltic, or Amazonian terranes, all of them affected by the Grenville orogeny. Alternatively, 1.0 Ga ages were reported in granites from northeastern Africa (Saharan metacraton and Arabian-Nubian shield), which can be viewed as a closer source for these zircons. Furthermore, two samples collected in the Debdou-Mekkam area show a significant and well-defined ($\approx 30\%$) Late Devonian (≈ 380 Ma) population, whose origin remains enigmatic.