

# **Provenance analysis of the Late Ediacaran basins from SW Iberia (Serie Negra Succession and Beiras Group): evidence for a common Neoproterozoic evolution**

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This study makes a comparison of the populations of detrital zircon from Late Ediacaran greywackes of the Ossa-Morena Zone (OMZ) and the southern domains of the Central Iberian Zone (S-CIZ). The results obtained reveal that the main difference between the age spectra of both populations of detrital zircon is the Neoproterozoic, in particularly the Cryogenian grains. Our new data suggest that deposition in both CIZ and OMZ Ediacaran basins was coeval and shows a long lived magmatic event typical of the northern Gondwana margin (Avalonian–Cadomian belt and Pan-African belt). Overall, SW Iberia shows the following sequence of Cryogenian and Ediacaran zircon-forming events: i) ca. 850–700 Ma, Pan-African suture (well represented in the Beiras Group and in the Mares Formation of the Serie Negra Succession); ii) ca. 700-635 Ma, Early Cadomian arc (dominant in

the Beiras Group and in the Mares Formation of the Serie Negra Succession); and iii) ca. 635-545 Ma, Late Cadomian arc (the most important in the Mosteiros and Escoural formations of the Serie Negra Succession). The obtained results reinforce that the Late Ediacaran basins of SW Iberia were evolved together in the active margin of North-Gondwana in the same paleogeographic scenario but sufficiently separated to justify the differences mainly identified in their Neoproterozoic detrital zircon contents. This finding shows that there is no apparent reason to believe that the boundary between the OMZ and the S-CIZ marks a Cadomian suture.

**Keywords:** Detrital zircon, Source-areas, Central-Iberian Zone, Ossa-Morena Zone, North Gondwana.