Sedimentary provenance of Neogene strata from the SW Portuguese Coast (Sines Cape): detrital zircon U-Pb geochronology

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In this preliminary study of provenance analysis Neogene sandstones and conglomerates of the Alvalade Basin were sampled, from the sea cliffs nearby the Sines Cape (SW Portuguese Coast). Detrital zircons were extracted by conventional methods of particle size separation, magnetic and heavy liquids separation. Detrital zircons were dated by U-Pb method with LA-ICPMS. The U-Pb geochronology results indicate as potential fonts for all samples: i) the Carboniferous greywackes of the Mira Formation (South Portuguese Zone) or the upper Triassic sandstones of the Silves Formation Sandstones (Alentejo Basin) for the zircon ages older than the Permian; and ii) the sienites from the Sines Massif for the upper Cretaceous zircon ages. Note also that one sample includes a significant population of detrital zircon age of Permian age whose potential source is not known in the surrounding of the Alvalade Basin.

Keywords: Plio-Plistocene, Sandstones and conglomerates, Provenance analysis, Alvalade Basin.