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Metal deposition fluxes to the Canary basin.

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Atmospheric deposition of african dust in the Canary basin has been recorded as part of the European Union FEDER funded CLIMAAT and CLIMARCOST (INTERREG IIIB) projects. Aerosol (soluble and total) metal concentrations and the dry deposition fluxes from to the region have been determined from dust samples collected at Gran Canaria Island (28º06´N, 15º24´W). Three main associations of particulate trace metal were detected using principal component analysis: anthropogenic elements (Pb and Cd), marine salts (Na and Mg) and crustal elements (Al, Fe, Mn, Ca and Co). Elemental characterisation of the mineral aerosol and back trajectories of the air masses appear to indicate two main regional African sources of dust: North-western Africa and Sahel. The highest Fe/Al and Co/Al ratios were observed during summer dust outbreaks. However, most of the samples collected present similar Fe/Al ratios due to a complex contribution of particles origin from the regions of north and west Sahara which are crossing for the most of trajectories air mass that arrive to Canary Islands.