Geophysical Research Abstracts,
Vol. 11, EGU2009-11430, 2009
EGU General Assembly 2009

Chemical characterisation of african dust transported to Canary Region

M.D. Gelado, P. López, S. Prieto, C. Collado, and J.J. Hernández

Faculty of Marine Sciences, University of Las Palmas de Gran Canaria, Las Palmas, Spain (mgelado@dqui.ulpgc.es)

African dust pulses have important effects on the climate conditions and the marine biogeochemistry in the Canary Region. Aerosol samples have been collected at three stations on Gran Canaria Island (Taliarte at sea level, Tafira 269 m a.s.l. and Pico de la Gorra 1930 m a.s.l.) during 2000-2008. Elemental characterisation of the collected mineral aerosol and back trajectories of the air masses are used to distinguish regional African sources of dust. Dust aerosol samples from North Sahara (Morocco, North Algeria and Tunisia), West and Central Sahara (20º-30ºN, 18ºW-50ºE) and Sahel (0º-20ºN, 18ºW-50ºE) have shown different Ca/Ti, Al/Ti and Fe/Al ratios. Ti appears as a better tracer element of specific source of dust than Fe, probably due to a less mineral alteration during the atmospheric transport.