

TEMPORAL VARIATION AND SIZE DISTRIBUTION OF SOLUBLE TRACE METALS IN MARINE AEROSOLS

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Size resolved and bulk aerosol samples were collected during 4 field experiments 3 in winter and one in summer at the Cape Verde Atmospheric Observatory (CVAO). The samples were analyzed for their total and soluble trace metal contents.

Results show variations in trace metal concentration and size distribution with respect to seasons with higher concentrations and preferred coarse mode distribution observed during winter months as compared to lower concentrations and less coarse mode dominated size distribution during the summer. Strong temporal variation in the soluble content of trace metals such as Fe, Zn, Mn was observed which also showed strong pH dependency. Soluble iron was mainly in Fe (III) state and turned to be higher when air masses were of anthropogenic origin. Trace metals including Fe, Ni, V, showed higher solubility in aerosol particles between 140 to 520 nm while Mn showed higher solubility in particles between 1.2 to 3.5 μ m.

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