

CHEMICAL COMPOSITION OF PRECIPITATION IN THE EASTERN MEDITERRANEAN ATMOSPHERE

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Short and long-term variations in chemical composition of precipitation in the Eastern Mediterranean was investigated by analyzing approximately 500 daily, wet-only precipitation samples collected between 1992-2000 at a rural station on the Mediterranean coast of Turkey. Collected samples were analyzed for major ions and trace elements. Concentrations of anthropogenic species in rain water, such as SO₄²⁻, NO₃⁻, Zn, Cu, Pb are comparable to the concentrations reported for regions that affected from anthropogenic emissions. Although the concentrations of ions responsible for the acidity in precipitation is relatively high, pH of the rain water was 5.1 indicating extensive neutralization of acidity in rain. Alkaline soil was found to be responsible for the neutralization. Measured Ions and elements showed well defined seasonal variations. Concentrations of crustal elements were high in summer and concentrations of marine elements are high in winter season due to season dependent generation mechanisms. Seasonal variations in the concentrations of anthropogenic species were not as pronounced as those observed in crustal and anthropogenic elements and ions. Sulfate concentration showed a statistically significant decrease between 1992 and 2000, but similar decrease was not observed in concentrations of NO₃⁻ and other anthropogenic species. Wet deposition fluxes of measured parameters showed seasonal cycles that are consistent with rainfall pattern in the region.