

A study of the particulate matter PM10 composition in the atmosphere of Chillán, Chile

Celis, José E.

Morales, José R.

Zaror, Claudio A.

Inzunza, Juan C.

Inhalable particulate matter (PM10) concentrations were measured over 24-h intervals at six different urban sites in the city of Chillán from September 2001 to April 2003. Sampling locations were selected to represent central city, commercial, residential, and industrial portions of the city. Chemical composition of PM10 was performed to samples of 47 mm diameter Teflon membranes within the city of Chillán. The spatial and temporal variability of the chemical composition of PM 10 was evaluated taking into account additional data from meteorology and further air pollutants. The majority of PM mass was comprised of carbon, nitrate, sulfate, ammonium, and crustal components but in different proportion on different days and at different sites. The chemical analyses showed that carbonaceous substances and crustal material were the most abundant component of PM10 during the winter and summer, respectively. The concentrations of PM10 were higher during the cold season than during the warm sea