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## PARTICULATE MATTER MEASURED IN CAMAGÜEY, CUBA DURING 2012 AND 2013. CHEMICAL ANALYSIS AND SOURCE APPORTIONMENT STUDY.

Interactions between aerosols, clouds and precipitation

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Atmospheric aerosol particles were collected at Camagüey (21.42° N, 77.85° W, 122 m asl), Cuba, during 2012 and 2013, for investigating the particulate matter (PM) concentration and elemental composition. Samples were collected with a low volume particulate impactor twice a week with a collection time of 24 hours. Gravimetric analysis of the particulate matter fractions PM<sub>1</sub> (PM<sub>10</sub> < 1 µm) was carried out for 185 samples. Results showed mean values of PM<sub>1</sub> levels of 16.1 µg m<sup>-3</sup> (std = 12.6 µg m<sup>-3</sup>), varying from 2.5 µg m<sup>-3</sup> to 63.9 µg m<sup>-3</sup>. The behavior of PM<sub>1</sub> concentration in the time is analyzed.

The same samples were used for the chemical component determination with Energy dispersive X-ray fluorescence (EDXRF) technique. Equivalent black carbon (EBC) was measured by means of reflectance. Together with gravimetric mass of the deposited matter the identification of sources apportionment was possible by use of Principal Component Analysis and Positive Matrix Factorization methods. Four sources have been identified by both methods: marine salt aerosols, dust from earth surface, combustible, mixed industrial and contamination aerosols. But a different apportionment was obtained by the methods. These results are showed and discussed.

There is a local and regional interest of the results by the information on the characteristics of the aerosols in the measurement site. Also, the presented values could be used by those working with atmospheric dispersion models. Also, these data could be used as input in Regional Climate Models

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