

MCCM-WEPS: Coupling of Meteorological, Air Quality and Erosion Models for Mexico City.

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Abstract

Since natural dust emissions are an important factor in the air quality of Mexico City, a modeling effort to quantify their sources and evaluate their impact on the population is presented.

The meteorological and air quality model Multiscale Climate and Chemistry Model (MCCM) provides the meteorological inputs to the erosion model Wind Erosion Prediction System (WEPS) that then provides the natural PM₁₀ emissions to be transported.

The system was developed to study the particles dispersion from natural sources (unprotected soils) as agricultural lands and Lake of Texcoco. These sources are located around the Valley of Mexico City. As a result of this research we developed a system with the capability of modeling the phenomenon of air pollution by natural particles emitted by wind erosion and to generate case study scenarios useful to propose control policies. Some of them are presented here. Also an effort to predict with anticipation this phenomenon is under way.