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## Satellite-derived land surface parameters for mesoscale modelling of the Mexico City basin

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**Abstract.** Mesoscale meteorological modelling is an important tool to help understand air pollution and heat island effects in urban areas. Accurate wind simulations are difficult to obtain in areas of weak synoptic forcing. Local factors have a dominant role in the circulation and include land surface parameters and their interaction with the atmosphere. This paper examines an episode during the MCMA-2003 field campaign held in the Mexico City Metropolitan Area (MCMA) in April of 2003. Because the episode has weak synoptic forcing, there is the potential for the surface heat budget to influence the local meteorology. High resolution satellite observations are used to specify the land use, vegetation fraction, albedo and surface temperature in the MM5 model. Making use of these readily available data leads to improved meteorological simulations in the MCMA, both for the wind circulation patterns and the urban heat island. Replacing values previously obtained from land-use tables with actual measurements removes the number of unknowns in the model and increases the accuracy of the energy budget. In addition to improving the understanding of local meteorology, this sets the stage for the use of advanced urban modules.

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