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Model assessing the impact of biomass burning on air quality and photochemistry in Mexico City

Lei, W.; Li, G.; Wiedinmyer, C.; Yokelson, R. J.; Molina, L. T.
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Biomass burning is a major global emission source for trace gases and particulates. Various multi-platform measurements during the Mexico City Metropolitan Area (MCMA)-2003 and Megacity Initiative: Local and Global Research Observations (MILAGRO)-2006 campaigns suggest significant influences of biomass burning (BB) on air quality in Mexico City during the dry season, and the observations show emissions from BB impose viable yet highly variable impacts on organic aerosols (OA) in and around Mexico City. We have developed emission inventories for forest fires surrounding Mexico City based on measurement-estimated emission factors and MODIS fire counts, and for garbage fires in Mexico City based on in situ-measured emission factors and the population distribution and socioeconomic data. In this study, we will comprehensively assess the impact of biomass burning on the aerosol loading, chemical composition, OA formation and photochemistry in Mexico City using WRF-Chem. Analysis of the model results, in conjunction with concurrent field measurements, will be presented.

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