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Model assessing the impact of biomass burning on air quality in the Mexico City Metropolitan Area

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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 have indicated significant influences of biomass burning (BB) on air quality in Mexico City during the dry season, and the observations have shown that the 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 in and near Mexico City based on measurement-estimated emission factors and MODIS satellite 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 carbonaceous aerosols (POA, SOA and EC), ozone and OA formation in Mexico City using WRF-Chem. Analysis of the model results, in conjunction with concurrent field measurements, will be presented.