Fire Emissions Modeling in support of MIRAGE-Mex

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Fires emissions can impact the areas surrounding and downwind of Mexico City. Although the primary biomass burning season in Mexico and Central America does not occur until later in the springtime (April-May), fires may have an impact in the air masses studied during the MIRAGE-Mex. To better quantify these impacts, a model will used to produce estimates of fire emissions that occur during the MIRAGE-Mex campaign. The emissions will have a high spatial (~ 1 km) and temporal (~ 1 day) resolution such that they can be used as inputs to both regional and global chemical transport models.

A framework for estimating fire emissions will be established to include these emissions in the chemical forecasting performed with the MOZART chemical transport model. The MODIS Rapid Response fire detection product (available from the University of Maryland at http://maps.geog.umd.edu/activefire.asp) will be used to drive the emissions model during the study. More detailed estimates will be developed after the campaign to be used in the hindsight model simulations. Evaluations of the chemical transport model simulations (both global and regional) will be performed after the campaign to assess the impact of fire and biogenic emissions on the air masses studied as part of MIRAGE-Mex.