

Evolution of Aerosol Hygroscopicity within the Mexico City Plume

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During the 2006 MILARGO campaign, a differential mobility analyzer / tandem differential mobility analyzer (DMA / TDMA) was used on board the National Center for Atmospheric Research (NCAR) C-130 to characterize the change in concentration and properties of the Mexico City aerosol as it was transported away from the metropolitan area and, typically, towards the Gulf of Mexico. Unlike in previous versions of this instrument, the DMA and TDMA were operated in parallel, which substantially improved time resolution. The measured size and hygroscopicity distributions have been coupled with calculated back trajectories in order to examine the processing and dilution of the aerosol as it is transported over times scales of hours or days. When possible, the properties of distinct particle types observed in the hygroscopicity distributions were tracked.