Parameterization of aerosol sinks in chemical transport models

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The modelers point of view is that the aerosol problem is one of sources, evolution, and sinks. Relative to evolution and sink processes, enormous attention is given to the problem of aerosols sources, whether inventory based (e.g., fossil fuel emissions) or dynamic (e.g., dust, sea salt, biomass burning). On the other hand, aerosol losses in models are a major factor in controlling the aerosol distribution and lifetime. Here we shine some light on how aerosol sinks are treated in modern chemical transport models. We discuss the mechanisms of dry and wet loss processes and the parameterizations for those processes in a single model (GEOS-5). We survey the literature of other modeling studies. We additionally compare the budgets of aerosol losses in several of the ICAP models.