

Composition and sources of aerosol above the UTLS: results from the NASA GEOS-5 model

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Several sources contribute to aerosol in the upper troposphere-lower stratosphere. First, it is injected at altitude by explosive volcanic eruptions. Second, it descends from the stratosphere, where it originates from photolysis and oxidation of carbonyl sulfide (OCS). And third, it is transported upward from the troposphere mainly in the tropics. In this presentation, we will present an overview of the sources of stratospheric aerosols during the POSIDON field mission, as simulated by the NASA Goddard Earth Observing System, Version 5 (GEOS-5). We have recently introduced several new features to GEOS-5 that resulted in an improved representation of the stratospheric aerosol layer during volcanically active and quiescent periods. We will describe the current GEOS-5 capabilities and its evaluation with observations, including from the POSIDON field campaign, as well as our plans for future development specifically within the Forward Processing (FP) system used for mission support.