

Parameterizing the near-source chemistry of biomass burning smoke plumes

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The **Aerosol Simulation Program v2.1 (ASP)** models the formation of O₃ and SOA in smoke plumes.

It can be run as a box model, or as a subroutine within 3D Eulerian models (Alvarado et al., 2009) and Lagrangian transport models.

ASP Parameterization (top right):

- LUT input variables:
 - Fire type (e.g., Tropical Forest, Temperate Forest, Boreal Forest, and Savannah/Grassland)
 - Starting/Ending Solar Zenith Angle (SZA)
 - Overhead O₃ Column
 - Temperature

O₃ difference in ASP vs Standard GEOS-Chem setup (bottom right)

