

## Sources and Uncertainties in the Stratospheric Sulfur Budget

Michael J. Mills<sup>1</sup>

<sup>1</sup>*Atmospheric Chemistry Observations and Modeling, National Center for Atmospheric Research, Boulder, CO, USA*

New developments in global chemistry climate modeling are providing greater understanding of the importance of natural and anthropogenic sources of sulfur to the stratospheric aerosol layer. I present calculations using version 6 of the Whole Atmosphere Community Climate Model (WACCM6), which includes interactive sulfur chemistry, and sulfate aerosol microphysics. Comparisons of calculations to *in situ*, ground-based, and satellite observations provide strong validation of the sulfur budget in WACCM6. Calculations aid in interpretation of observations, and point to uncertainties and limitations of observations and models alike. I present a current modeling perspective on sources and uncertainties in the stratospheric sulfur budget, and processes affecting sulfur in the upper troposphere.