

SEMINAR

Atmospheric Chemistry with a Bang: New Perspectives on Volcanic Eruptions and Stratospheric Ozone

Susan Solomon

Ellen Swallow Richards Professor of Atmospheric Chemistry and Climate Science, Massachusetts Institute of Technology

Abstract:

This talk reviews the understanding of how volcanoes influence ozone depletion and describes its relevance for new research on the healing of the ozone layer, particularly in the Antarctic. Our work shows that overlooked volcanic eruptions since about 2005 have delayed the healing that would otherwise have occurred, particularly during 2015 (when a record October ozone hole occurred following the Calbuco eruption). Nevertheless, multiple observations and model calculations taken together indicate that the onset of healing of Antarctic ozone loss has now emerged in certain months despite volcanic delays. Consistent fingerprints of healing of Antarctic ozone since 2000 are obtained in (i) seasonal increases in ozone column amounts, particularly in September but also January, (ii) the September vertical profile of ozone concentration changes, and (iii) decreases in the areal extent of the ozone hole in September. This work highlights the need for new measurements of chemical constituents close to the tropopause in the southern hemisphere to better project the healing of the ozone hole and its connections to southern hemisphere surface climate.

Date: January 6, 2016

**Time: 3:15 refreshments; 3:30 seminar
FL2-1022, Large Auditorium**

For more information please contact Dianne Hodshon, dhdoshon@ucar.edu, phone 303-497-1401.