

Highlights of the Halocarbons and other Atmospheric Trace Species (HATS) Group

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Highlights since the last annual meeting include:

- Continued monitoring of the trend of decreasing total equivalent chlorine from the NOAA/CMDL flask and in situ halocarbon network. The rate of decrease is $\sim 0.7\% \text{ yr}^{-1}$.
- Measurements of the atmospheric decay of CH_3CCl_3 that was published in *Science* provided refined estimates of OH radical concentrations on global and hemispheric scales. Close monitoring of the subsequent decay observed for CH_3CCl_3 allowed for an improved understanding of atmospheric removal rates for this gas and many other trace gases that also become oxidized by OH, such as CH_4 , HCFCs, HFCs, and hydrocarbons.
- Atmospheric nitrous oxide (N_2O) and sulfur hexafluoride (SF_6) continue to increase. The rate of atmospheric SF_6 appears to have slowed down recently.
- Installed the last of our next generation in situ gas chromatographs at Niwot Ridge, Colorado. Retired RITS GCs at Mauna Loa, American Samoa, and South Pole. Discovery of previously unknown peaks will add to our suite of in situ measurements of OCS, HCFC-141b, and HCFC-142b.
- Emissions of ozone-depleting substances and climate forcing gases were calculated from the Washington-New York corridor using Harvard Forest data in a set of three papers submitted to the *Journal of Geophysical Research (JGR)*.
- Publication of articles on the role of methyl bromide from the ocean in *JGR*, and the atmospheric budget of methyl bromide in *Nature*.
- Completion of the Sage III Ozone Loss Validation Experiment (SOLVE) airborne campaign and submission of papers for a special issue in *JGR*. Highlights include observation of total equivalent chlorine leveling off in the stratosphere and the highest observed ozone loss rates in the Arctic stratosphere.
- Completion of the modular design for a new airborne gas chromatograph including a mass selective detector (MSD) and two electron capture detectors (ECDs) funded by NASA.
- Obtained an archive of 20th century air by sampling air from the firn at South Pole. Preliminary results will be shown at the annual meeting.
- Received a CIRES grant to initiate a study of fluxes of halocarbons from plants planned for this summer.