Non-CO$_2$ Climate Gases: Wrap-Up and Future Plans

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NOAA/ESRL Trends of Non-CO$_2$ Climate Gases

Monitoring of key gases for international & national assessments.

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Highlights of Non-CO$_2$ Climate Gases

- Monitoring of key non-CO$_2$ climate gases for trends and distributions provides key physical inputs to the international scientific assessments on stratospheric ozone depletion and climate.
- Emission studies from airborne and mobile platforms provide useful information on the banks of chemicals and their surface fluxes.
- Process studies help in our understanding of how pollutants, like ozone and CO, are transformed and transported in the environment.
- Water vapor measurements remain essential for climate research because water vapor is an important feedback to the climate system with major implications to stratospheric ozone and climate.
Non-CO₂ Climate Gases Future Plans

- Add important non-CO₂ climate gases (e.g., PFCs, NMVOCs) to the ESRL flask and in-situ gas-chromatograph halocarbon network. Develop an improved calibration system.
- Participate in a new global sampling strategy for non-CO₂ climate gases using the NCAR HIAPER aircraft: NSF HIAPER Pole-to-Pole Observations of Greenhouse Gases (HIPPO).
- Provide regional estimates of North American emissions of CFCs, HCFCs, HFCs, and PFCs.
- Water Vapor: 1) Complete accuracy assessment to reconcile existing water vapor data; 2) Lab analysis of the frost point technique; and 3) Addition of more polar and tropical stations.
- Add in situ ozone instrumentation to NOAA/ESRL Carbon Cycle aircraft to understand the processes and emissions that affect radiative forcing.