

SEMINAR

Recent Studies Involving the Unexpectedly Interesting CFC-11

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CFC-11 production has been regulated since the signing of the Montreal Protocol in 1987 due to its role in the destruction of stratospheric ozone. The slow release rate of CFC-11 from the banks where it is stored after use (~3-5%/year) and its long atmospheric lifetime (~50 years) have led to a gradual decline in atmospheric concentrations from a peak in the early 1990s. The recent detection of CFC-11 atmospheric concentrations not decreasing as quickly as expected led to the discovery of an increase in CFC-11 emissions and production, in violation of the Montreal Protocol. This discovery spurred new research focused on CFC-11 leading to the publication of several high profile papers in the last couple of years with more on the way.

In this talk I will give an overview of the research we have been doing at NOAA over the past ~five years involving CFC-11 (as well as other long-lived trace gases such as CFC-12 and N₂O). Our research has generally focused on emissions change detection and transport variability, which are interrelated, and has incorporated an extensive number of WACCM simulations and detailed observational analysis. I will show results from this work and discuss some of the implications for long-lived trace gas emission calculations and how stratospheric transport variability can affect surface trace gas levels.

Monday, February 24, 2020, 3:30 p.m

Refreshments 3:15 p.m

NCAR Foothills Laboratory

3450 Mitchell Lane, Boulder, CO 80301

FL2-1022, large seminar room

Live webcast: <http://ucarconnect.ucar.edu/live>

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