New Master Thesis Topic

Title: Decadal stratospheric ozone trends from multiple satellite data

Short description

Ozone-depleting substances (ODS) are declining following the phase-out regulated by the Montreal Protocol and its Amendments. Stratospheric ozone, which protects the biosphere from harmful UV radiation, is expected to recover over the next decades. However, ozone recovery is not observed in all regions and altitudes due to feedback mechanisms from increasing greenhouse gases (GHG). Using various merged satellite data covering more than 4 decades, ozone trends are investigated using multiple linear regression and a dynamical linear model. The goal is to better understand the combined effects of the ODS decline and climate change on stratospheric ozone variability and changes.

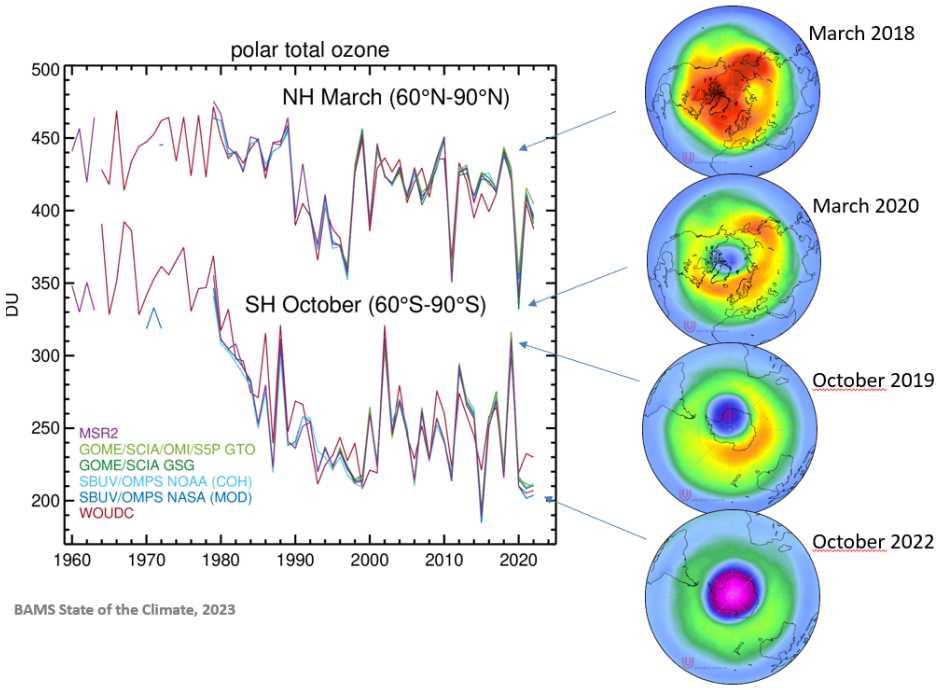

Figure: *Total ozone timeseries from 1960 to 2022 in the Arctic (March) and Arctic region (October) from different satellite ozone datasets.*

Skills needed

You need an interest in atmospheric science, enthusiasm for the topic, and very good programming skills (Python). The work is mainly done with a computer. Trends are calculated using available programs and you create plots documenting your results. You should be able to adjust programs to your research needs.

Name of the IUP research

UVSAT - UV Satellite Data and Science Group

Our research covers the following areas: satellite remote sensing, atmospheric chemistry and dynamics, ozone-climate interaction, and solar physics

https://www.iup.uni-bremen.de/UVSAT/

Topic for students of

☒ M.Sc. Environmental Physics
☒ M.Sc. Space Sciences and Technologies

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Start after lecture period in SS 2024 (July 2024)