

SPARC Data Initiative - Overview

Michaela Hegglin[†]; Susann Tegtmeier; John Anderson; Samuel Brohede; Lucien Froidevaux; Jessica Neu; Bernd Funke; Erkki Kyrölä; Alexei Rozanov; Joachim Urban; Thomas v. Clarmann; Kaley Walker; Ashley Jones; Matthew Toohey

[†] University of Toronto, Canada

Leading author: michaela@atmosp.physics.utoronto.ca

The last few decades represent a "golden age" of stratospheric composition measurements, and it is likely that the future stratosphere will not be as well measured as it is now. It is therefore important to capture existing knowledge on current and recent instruments before this knowledge is lost. In this contribution we will present an overview on the SPARC Data Initiative, which aims at tackling this issue by performing an international multi-instrument comparison of stratospheric chemical trace gas climatologies. The initiative's main objectives are to assess the state of data availability from the multi-national suite of space-based instruments, to compile vertically resolved tracer climatologies in collaboration with the instrument PIs, and a detailed inter-comparison of the climatologies, which summarizes useful information and highlights differences between data sets. Where possible, the source of the differences will be discussed. The tracer climatologies, which cover the region from the upper troposphere to the lower mesosphere, include all major long-lived trace gases (e.g., O₃, H₂O, N₂O, CH₄), shorter-lived trace gases important to stratospheric chemistry (e.g., BrO, ClO, NO₂), and aerosol. The results will be published in a SPARC report, intended to provide a guide for users of chemical data sets in order to facilitate data use for model-measurement comparisons and other data analyses.