

## **The SPARC Polar Stratospheric Cloud Initiative (PSCi)**

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The essential role of polar stratospheric clouds (PSCs) in the depletion of stratospheric ozone has been well established. However, details of PSC processes, e.g. how NAT particles form, grow, and sediment, leading to the denitrification required for sustained ozone loss, are still not well understood in spite of three decades of intensive research. Vortex-wide measurements from recent satellite missions have challenged our present knowledge of PSC processes and modeling capabilities and motivated numerous new research activities. The SPARC PSC initiative was organized in January 2015 to address key questions related to PSCs and their representation in global models with the following main objectives: identify key PSC parameters required by global models; identify strengths and limitations of the PSC datasets; define a methodology to obtain the key PSC properties required by models from the observational datasets; develop a state of the art PSC climatology; and identify remaining open science questions. PSC climatologies from the Michelson Interferometer for Passive Atmospheric Sounding (MIPAS) on Envisat (2002-2012) and the Cloud-Aerosol Lidar with Orthogonal Polarization (CALIOP) on CALIPSO (2006-present) will be presented in a separate contribution. In this presentation, we describe the PSCi activity in general, key findings, and remaining open questions.

Key words: polar stratospheric clouds, stratosphere, ozone