Special Issue

Polar Stratosphere Dynamics

Message from the Guest Editor

Stratospheric polar vortices are planetary-scale westerly flows that encircle the pole in the polar and subpolar stratosphere and play an important role in the distribution of stratospheric ozone, the movement of air masses in the polar stratosphere and changes in stratospheric temperature over the polar region. Polar ozone depletion, which occurs inside the polar vortices from late winter to spring, contributes to an increase in the ground level of ultraviolet radiation (at wavelengths shorter than 315 nm) dangerous to the biosphere. Polar vortices can contribute to an increase in the stratosphere-troposphere exchange during their strengthening. The earlier breakdown of the polar vortex occurs as a result of the penetration of vertically propagating planetary Rossby waves into the stratosphere and is accompanied by sudden stratospheric warmings. There are many open questions regarding the dynamics of the polar stratosphere. We invite the submission of original research articles and reviews on any aspect directly or indirectly related to the dynamics of the polar stratosphere in general and the dynamics of polar vortices in particular.

Guest Editor

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Deadline for manuscript submissions

closed (16 December 2023)

Atmosphere

an Open Access Journal by MDPI

Impact Factor 2.3
CiteScore 4.9

mdpi.com/si/126395

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Message from the Editor-in-Chief

Continued developments in instrumentation and modeling have driven atmospheric science to become increasingly more complex with a deeper understanding of concepts, mechanisms, and interactions. This is the field that innovation built and it has led to a better appreciation for the complexity with atmosphere. Human life is intertwined in this complexity as we strive to better understand our atmosphere. Climate change is constantly stretching the limits of our thinking and forcing new ideas and concepts to be played out. Welcome to the Anthropocene!

Editor-in-Chief

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