Special Issue

Current Atmospheric Changes, Projections and Environmental Impacts in the Occidental Southern Polar Region

Message from the Guest Editor

West Antarctica, especially the Antarctic Peninsula, is one of the regions on Earth where air surface temperatures have experienced warming at higher than global average rates. The overall warming has occurred along with other atmospheric changes in the southern polar region such as cloudiness, precipitation, radiation, and the latitudinal position and intensity of the westerly circulation. As a consequence of these changes, abrupt impacts in the Antarctic's ecosystem and cryosphere have occurred during recent decades, and they are expected to continue in the future. In recent years, observed surface meteorological data, satellite, and atmospheric model data have been used to characterize the Antarctic region's surface climate and to study the atmospheric forcing mechanisms that modify the surface climate variables. Although the efforts mentioned above have improved our understanding of the climate variability and changes in the southern polar region, future projected atmospheric changes and their impacts on the Antarctic's environment remain open questions that need to be addressed.

Guest Editor

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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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