Special Issue

Sea Ice and Climate

Message from the Guest Editor

In the last decades, Arctic winter temperatures have more than doubled, accompanied by a strong reduction of the Arctic sea ice extent and sea ice thickness. This so-called Arctic amplification weakens the meridional temperature gradient between the Arctic and mid-latitudes and changes the nonlinear interactions between planetary and baroclinic waves. To understand the tropo- and stratospheric pathways for Arctic-mid-latitude interactions, an improved understanding of the physical mechanisms in measurements, reanalysis data and complex climate models is necessary. We encourage you to contribute with your expertise to this hot spot, the two-way impacts between Arctic sea ice changes and the regional and global climate system, by experimental and model studies. We plan to publish innovative studies which investigate the role of atmospheric and Arctic climate feedback mechanisms in winter and summer, e. g., clouds and boundary layer turbulence for Arctic amplification, the role of atmospheric teleconnection patterns and jet stream changes following sea ice and snow changes, and the role of stratospheric ozone changes for Arctic-mid-latitude linkages.

Deadline for manuscript submissions

closed (31 October 2019)

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About the Journal

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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