

Category

AC Atmosphere, Climate

Session Number

AC-5

Session Title

Tropical-Polar Teleconnections and their Climate impacts

Session Description

In both Polar Regions, widespread and rapid changes are occurring in the atmosphere, ocean, and cryosphere. Future projections consistently exhibit continued and intensified polar transformations which can have cascading effects on the global climate. In the face of a rapidly changing global climate, it is becoming increasingly important to better understand the consequences of and the external and internal drivers behind observed and projected rapid polar changes. More specifically, it is becoming imperative to better understand the relevance of remote forcings, for example from the tropics, versus direct local forcings of observed and projected changes in the coupled polar ocean-atmosphere-cryosphere system.

This session aims to provide a setting to foster discussion on the tropics-pole teleconnection, in both the Northern and Southern Hemispheres, as well as how the Polar Regions feedback to lower latitudes. Contributions focusing on the tropical forcing of recent Arctic and Antarctic changes, teleconnections, and the underlying mechanisms are especially welcome. Studies of processes and patterns span topics such as the role of atmospheric jets, the Hadley and Ferrel cells, the Antarctic Dipole, the NAO, the Southern Annular Mode, the polar vortex, ENSO, Indian Ocean dipole, ITCZ, or MJO dynamics. Studies investigating the role of the Interdecadal Pacific Oscillation and Atlantic Multidecadal Oscillation in polar climate variability are also relevant to this session.

Keywords: Tropics, Midlatitudes, Teleconnections, Polar Atmosphere, Jet Stream, Rossby Waves, Weather Pattern, Stratosphere, Air-Sea Interaction

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