

ATMOSPHERIC CHEMISTRY AT THE INTERFACES
Joint CACGP/IGAC and WMO conference,
Cape Town, South Africa
17 to 23 September 2006

<http://www.atmosphericinterfaces2006.co.za/content.php?clD=2>

Session 11:

**Interface processes between the Ocean, Atmosphere,
Sea Ice, and Snow in Polar Regions**

In the near future climate change is predicted to be at a significantly faster rate in Polar regions than for the planet as a whole, due to the influence of feedbacks related to the changing surface of Polar Oceans. Numerous recent observations indicate that the exchange of atmospherically important chemical species with this surface is driven by physical and photochemical processes occurring on the surface of the snowpack and sea ice, and that this exchange significantly impacts the concentrations of chemical species such as ozone and mercury. Biologically-mediated processes have also been observed to impact the interactions between ocean, ice, and/or snow and the atmosphere. Both dynamic (movement) and thermodynamic (temperature) processes in the marine cryosphere affect the exchange process of mass and energy, and we know that the latter are being affected by global scale climate variability and change. The question then arises as to how the lower atmosphere in the Polar regions will change as climate and the nature of the snow/sea ice volume change. Papers on all aspects of surface exchange processes in Polar regions are solicited in this session, including experimental, modeling, laboratory and theoretical studies. A number of international projects have been developed comprising comprehensive experiments on polar air-surface exchange such as OASIS (Ocean Atmosphere Sea Ice and Snow exchange processes), AICI (Atmosphere Ice Chemical Interactions), ASCOS (Arctic Summer Cloud Ocean Study) and POLARCAT (Polar Study using Aircraft, Remote Sensing, Surface Measurements and Models, of Climate, Chemistry, Aerosols, and Transport). The session will provide a forum to discuss these initiatives and the science behind them as the scientific community prepares for the International Polar Year (2007-2009).

Session conveners:

Jan W. Bottenheim, Environment Canada, Toronto, ON, Canada

Harry Beine, C.N.R. - IIA, Rome, Italy

Patricia Matrai, Bigelow Laboratory for Ocean Sciences, W Boothbay Harbor, ME, USA

Paul Shepson, Purdue University, W Lafayette, IN, USA