



Arctic Prediction in a Changing Climate: Understanding Key Processes and Challenges

Society of Chemical Industry (SCI), 14-15 Belgrave Square, London, SW1X 8PS

Wednesday 21 November 2018, 2pm – 6pm

The Arctic is the most rapidly warming region on Earth and facing considerable environmental change. These changes are beginning to alter the way humanity uses and exploits the Arctic region with commercial activities, such as tourism, fishing, mineral and oil extraction, and shipping, on the increase. Increased human activity in the Arctic has implications for safety and environmental conservation, and can cause tensions for local communities who rely on subsistence hunting and fishing, and community re-supply.

Environmental prediction for the Arctic therefore is becoming increasingly important but the capability to accurately predict the Arctic atmosphere–sea-ice–ocean system is relatively immature with short-term forecasts significantly less accurate than for the mid-latitudes. Some of the challenges for forecasting systems in the Arctic include: a relatively sparse observing network; some satellite-based observations are hard to use because of the snow and ice-covered surfaces; it is difficult and expensive to make detailed research-quality observations; and the dominant physical processes are different to those at mid-latitudes and the tropics.

To address these issues, the Year of Polar Prediction (YOPP) was developed as one of the key elements of the WMO’s Polar Prediction Project. Speakers at this meeting will discuss recent advances, and challenges associated with understanding and prediction of key Arctic processes using numerical models and observations. This will include new insights provided by several field campaigns and modelling experiments carried out under the YOPP umbrella.

Meeting Chair – Dr Ed Blockley, Met Office | Rapporteur – Dr Jonathan Day, University of Reading

14.00	Introduction and welcome	Dr Ed Blockley Met Office
14.05	The Year Of Polar Prediction: An Overview	Prof Ian Renfrew University of East Anglia (UEA)
14.15	What are the challenges and priorities for improved prediction and climate monitoring of the Arctic?	Dr Irina Sandu ECMWF
14.45	How well can we measure sea ice from space? Developments in remote sensing of Arctic sea ice.	
15.15	Chasing the source of the AMOC (Atlantic Meridional Overturning Circulation) - atmosphere-ocean coupling in the Iceland and Greenland Seas	Prof Ian Renfrew University of East Anglia
15.45	Refreshment Break	
16.15	Mixing it up: What connects Arctic clouds and sea ice?	Dr Ian Brooks University of Leeds
16.45	The view from above Arctic snow at 89-325 GHz: What can surface emissivity on these channels tell us about snowpack stratigraphy?	Dr Chawn Harlow Met Office
17.15	Why tundra snow is upside down in models, and why it matters	Prof Richard Essery University of Edinburgh
17.45	Meeting Close.	

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This meeting is part of the Royal Meteorological Society National Meetings programme, open to all, from expert to enthusiast, for topical discussions on the latest advances in weather and climate. Non-members are welcome to attend these meetings.