



## **Influence of the Barents Sea on the summer temperature in Europe and Asia**

Jan Sedlacek (1), Olivia Maritus (2), and Reto Knutti (1)

(1) Institute for Atmospheric and Climate Science, ETH Zürich, Switzerland, (2) Oeschger Center for Climate Change Research, University of Berne, Switzerland

In summer 2010 Russia and Japan experienced an extreme heatwave. Further, reanalysis data show that the Barents Sea was about 3°C warmer than climatology and that the sea-ice cover was reduced in spring/summer in that region. In this study we link the Barents Sea anomaly and the temperature variations over Europe and Asia. We found that a crucial element is the stability of the lower atmosphere over the Barents Sea region. If a stable lower atmosphere will be destabilized through the anomaly, the temperatures in Russia and eastern Asia decrease. If the anomaly occurs during a time when the lower atmosphere is unstable, Russia and eastern Asia experience warm temperatures. Additionally, we have investigated the relative importance of a tropical SST anomaly in relation with a polar SST anomaly.