Geophysical Research Abstracts
Vol. 13, EGU2011-2272-1, 2011
EGU General Assembly 2011

The role of atmospheric jets in ice edge dynamics

Harry Heorton (1), Daniel Feltham (1,2), and Ann Keen (3)
(1) University College London CPOM (hds@cpom.ucl.ac.uk), (2) British Antarctic Survey, (3) UK Met Office

Sea ice components of Global Climate Models crudely parameterise processes at the edge of the sea ice cover leading to inaccuracies in calculating the location of the sea ice edge and thus the extent of the cover. We investigate dynamic processes at the sea ice edge or marginal ice zone. Atmospheric jets are bands of modified wind velocity that form parallel to coastlines during on land winds. We have looked at the implication of an atmospheric jet on the momentum balance of the ice edge.
We present a study of a reduced 1 dimensional model of the sea ice momentum balance as described by Gray & Morland (1994), introducing an atmospheric jet and matching it to a model of free floating ice. We also investigate the effects of these jets upon the whole sea ice pack using the Los Alamos Sea Ice Model (CICE). We present preliminary simulations on an idealised domain using CICE. The ultimate objective is to develop a parameterisation of the effect of the atmospheric jet into a climate model component.