

Colloquium Talk

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Mechanisms of offshore solid and liquid freshwater flux from the East Greenland Current

Wednesday, April 19, 2023

at 15:15 h

ESI, Boltzmann Lecture Hall and online via Zoom meeting

Abstract: The mechanisms that control the export of freshwater from the East Greenland Current, in both liquid and solid form, are explored using idealized numerical models and scaling theory. A regional, coupled ocean/sea ice model is applied to a series of calculations in which key parameters are varied and the scaling theory is used to interpret the model results. The offshore ice flux, occurring in late winter, is driven primarily by internal stresses and is most sensitive to the thickness of sea ice on the shelf coming out of Fram Strait and the strength of meridional winds over the shelf. The offshore liquid freshwater flux is achieved by eddy fluxes in late summer while there is an onshore liquid freshwater flux in winter due to the ice-ocean stress, resulting in only weak annual mean flux. The scaling theory identifies the key nondimensional parameters that control the behavior and was found to reproduce the general parameter dependence found in the numerical model.

A. Constantin, D. Dritschel, N. Paldor
Zoom coordinates: <https://univiennea.zoom.us/>

Meeting ID: 663 0694 7737
Passcode: hkmQPT

April 14, 2023