Geophysical Research Abstracts, Vol. 7, 10317, 2005 SRef-ID: 1607-7962/gra/EGU05-A-10317 © European Geosciences Union 2005



Central Labrador Sea Freshwater Fluxes

S. Schmidt

Leibniz-Institut für Meeresforschng (IFM-GEOMAR)

The combination of new ARGO-float data, hydrographic sections and mooring data makes a three dimensional look at the upper Labrador Sea seasonal freshwater content possible. This seasonal freshwater pulse and its important role in the seasonal stratification is analyzed. The stratification in the upper waters is dominated by freshwater rather then temperature. A seasonal freshwater budget scheme is developed. It is shown in this study that the freshwater has its largest source in the West Greenland Current. There is no indication that Labrador Current water has a strong influence on the central Labrador Sea freshening. The main sink of the freshwater is the deep mixing in winter, providing fresh water to greater depths, where it balances the influence of salty Irminger Current waters and breaks up the freshening of the upper Labrador Sea layer.