Geophysical Research Abstracts,
Vol. 11, EGU2009-6928, 2009
EGU General Assembly 2009

Nordic Seas Ventilation, Overflows and Mixing

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Fritz Schottś activities at high latitudes focussed on water mass production processes (strong vertical currents) and on the export of Nordic Deep Waters (large deep transports) at the southern bpundary of the Labrador Sea into the lower limb of the Atlantic Meridional Overturning Circulation cell. While convection is strongly variable from year to year, he found the DWBC to be remarkably stable on time scales above seasonal. In this talk we take a look at the processes that govern the exchange between Nordic and Subpolar Atlantic Ocean basins. We shall address the buffering capacity of the Nordic Seas with respect to water mass formation, the overflows through gaps in the Greenland-Scotland Ridge which due to hydraulic control act as a low-pass filter for the variability of exchanges, and finally discuss the entrainment of ambient waters into the sinking plumes. Recent observations and modelling studies will be reviewed.