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Transport of the East Greenland Current in Fram Strait

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In this talk an overview shall be given from results from the moored current meter array in the East Greenland Current at 78°50'N in Fram Strait up to 2009. This mooring array has been monitoring the outflow from the Arctic Ocean since 1997 and measures both the upper ocean polar water as well as the deep flow. The obtained freshwater flux in the East Greenland Current, which peaked in 2008, appears to be uncorrelated with the total volume transport and anomalies in freshwater flux are found to be due to anomalies both in salinity and velocities. The annual mean volume transport of the East Greenland Current has been relatively constant around 9.5Sv from 2003 to 2009 and it shows a seasonal cycle which is highly correlated with northerly winds in Fram Strait. Before 2003, when the array was located somewhat further north, the total transport was more variable and about 3Sv less mostly due smaller deep transport. This confirms that the recirculation in Fram Strait is very important for the net flow and properties of the East Greenland Current further south. The temperature of the Atlantic Water in the East Greenland Current was warmest in 2006 and 2007 and has declined again since then, while the bottom waters have shown a gradual warming of $\sim$0.05 degrees C from 2003 until 2009.