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Monitoring the Faroe Bank Channel overflow

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The Faroe Bank Channel (FBC) is the deepest passage across the Greenland-Scotland Ridge and the deepest parts of this channel are continually dominated by cold, dense, water that flows with large speeds towards the Atlantic. This flow, the FBC-overflow, is an important contributor to North Atlantic Deep Water (NADW) and thus an important link in the Atlantic MOC. Since the late 1980ies, the Faroese Fisheries Laboratory has monitored the water mass properties of the channel with regular CTD cruises and in 1995, monitoring of current velocities by moored ADCPs was initiated as part of the Nordic WOCE programme. This activity has been ongoing since then and it is demonstrated that a high-quality time series of the overflow volume flux can be generated from these observations. The average volume flux of the FBC-overflow is about 2 Sv with a seasonal variation that can be explained by a simple hydraulic model. Inter-annual variations are also seen, but no persistent trend can be discerned for the decade of observations.