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More than two decades of Faroe Bank Channel overflow: Stable, but warming

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Since November 1995, we have monitored the volume transport of Faroe Bank Channel overflow (FBC-overflow) and since 2001, the bottom temperature at the sill of the channel. The FBC-overflow is the coldest and densest overflow component and contributes approximately one third of the total overflow. Together with water that it entrains en route, it is therefore one of the main sources for North Atlantic Deep Water and the lower limb of the Atlantic Meridional Overturning Circulation (AMOC). In spite of reported AMOC weakening, the FBC-overflow has shown no signs of reduced volume transport. In contrast, a linear trend analysis indicated a weak (but non-significant) positive trend in volume transport of +5% from 1996 to 2018. The bottom water at the sill of the channel is the coldest component of the FBC-overflow and the densest overflow component overall. Since high-quality monitoring of the bottom water temperature began in summer 2001, the bottom water has warmed by approximately 0.2 °C with most of the warming occurring in two periods: 2004-2007 and 2015-2019. During the period, salinity has also been changing and the combined temperature/salinity effect on the density of the FBC-overflow will be discussed.