Faroe Bank Channel overflow 1995 - 2005

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The Faroe Bank Channel (FBC) is the deepest passage across the Greenland-Scotland
Ridge and there is continuous overflow of dense water through the channel, which
has a substantial contribution to the global thermohaline circulation. Since November
1995, an Acoustic Doppler Current Profiler (ADCP) has been moored at the sill of
the channel continuously, except for short annual servicing periods. Since 2002, this
has been complemented by an additional ADCP and, in a short-term experiment, three
ADCPs have been moored across the channel simultaneously. In addition to this, CTD
sections have regularly been occupied across the channel and instruments, record-
ing temperature and salinity, have been moored for short periods. These observations
demonstrate that the channel, due to its small width, can be monitored fairly well with
only one ADCP mooring and they allow the generation of a time series of overflow
volume flux for the 1995-2005 period. The kinematic overflow flux, defined solely
from the velocity field, was found to have an average value of 2.1 Sv with seasonal
and inter-annual variations of an amplitude approximately 10% of the average, but
with no discernible trend for the whole period. The average flux of water with poten-
tial density exceeding 27.8 kg m-3 was found to be 1.9 Sv with average temperature
0.5 degrees C. 1.2 Sv had a potential temperature below 0 degrees C. No evidence
was found for a weakening overflow flux, but the salinity of the FBC-overflow has
increased substantially during the period.