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Meteoric Water, sea ice melt and Pacific Water and freshwater transports in the western Fram Strait from 1998-2009

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We present the late summer distribution and transports of freshwater components in the upper western part of the Fram Strait for several years since 1998. Hydrographic data and water values of δ^{18}O, PO_4 and NO_3 have been analyzed to distinguish Atlantic Water, Pacific Water (PW), sea ice melt (SIM) or freshwater removal from sea ice formation (IFB), and Meteoric Water (precipitation and riverine sources; MW).
In 2008 significant fractions of PW, up to 60%, were again present in the western Fram Strait, although still less than in 1998. This is in contrast to several years of measurements between 2002 and 2005, when PW almost vanished in this region. The dominant ratio of MW to IFB inventories west of 4^oE was fairly constant. Concentrations of the different water masses are further combined with volume transport estimates from an inverse model to calculate water mass transports. Results are discussed in the context of changes in large scale ocean circulation and regional processes on the Arctic shelves.