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The Western Arctic Boundary Current system: First results from a high-resolution moored array

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Initial results from velocity measurements in the Alaskan Beaufort Sea are presented with emphasis on transport. The shelf-edge array was comprised of five bottommounted ADCPs and two moored profiling Acoustic Current Meters as part of the Western Arctic Shelf Basin Interaction (SBI) Experiment in 2002-2004. The first year of data were used to produce vertical daily-mean velocity sections, as well as a time series of daily transport values. Although the array was situated where the various paths of outflow from the Chukchi Sea are believed to converge, the calculated transport indicates that only a small portion of the Pacific inflow through Bering Strait is accounted for at the site. The daily velocity sections reveal an intricate flow variability which is analyzed in the context of seasonally changing water masses and wind regimes.