

Geophysical Research Abstracts,
Vol. 10, EGU2008-A-06706, 2008
SRef-ID: 1607-7962/gra/EGU2008-A-06706
EGU General Assembly 2008
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The variability of the volume transport across the Drake Passage

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The variability of the barotropic volume transport across the Drake Passage for the period from 1992 to 2006 is analyzed based on the surface geostrophic current field estimated from the sea surface height anomaly grid data merged TOPEX/Poseidon and ERS. The larger and smaller values of transports appear in 1993, 1997 and 2003 and in 1995 and 2000, respectively, and the magnitude of transport variation is about 30 Sv. The low-frequency variability of the transports is dominated by fluctuations with periods of about 4.6 years. The intra annual fluctuations of the transports are statistically coherent with the ENSO (El Nino-Southern Oscillation) indices with a phase lag of about 3 months and the transport variation leading the ENSO indices. This suggests the existence of a teleconnection between the Antarctic and tropical Pacific Ocean.