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Variability of transport through the Drake Passage and its link to the meridional pressure gradient

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The relationship between the zonal transport across the Drake Passage and meridional pressure difference is studied by using an eddy resolving ocean state estimate simulated with the Massachusetts Institute of Technology general circulation model. The analysis is performed for monthly and yearly time series. The results show that while the meridional surface pressure difference alone can already explain a substantial part of transport variability, the pressure at 1000m gives the highest correlation. The contribution of sea surface elevation versus steric height signal are discussed.