

Validating the Agulhas seasonal cycle and inter-annual variability in 2 ocean models along the ACT array.

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Inter-Model comparison of the Agulhas Current volume transport and variability along the Agulhas Current Time-series array. Recent work was done on the ACT volume transport by Beal et al. 2015, which collected 3-years in-situ observational data. Modelling system outputs from HYCOM and ROMS will be compared against the in-situ ACT data, in terms of the mean net transport and a seasonal or perhaps an inter-annual signal. 30 years of modelling data is used from 1980 to 2010. This long-term dataset helps identify a possible annual signal, and viewing the surface structure of the current helps to identify meander events that cause the anomalies in the volume transport over the 30-year period, such as a Natal Pulse, along with a corresponding vertical section that shows the vertical current speed and offshore position of the current. During the event of a Natal Pulse the net transport decreases in the southwest direction and increases in the northeast direction along with an offshore shift in the core of the current. It is important to see how accurate the models may simulate results in comparison to the real-time data and to understand the complex transport dynamics in the Agulhas current system.