

## **On the effect of eddies and Rossby waves on the Meridional Overturning Circulation.**

The geostrophic component of the Meridional Overturning Circulation (MOC) is believed to be influenced on subannual timescales by eddies and Rossby waves (Hirschi et al., 2007). To quantify this influence, surface and vertical structure characteristics of westward propagations are studied from altimetry and deep moorings at  $26.5^{\circ}\text{N}$  through the RAPID array. Propagating signals are observed in both datasets with a dominant period of 180 days on the first baroclinic mode and they are still present at the western boundary of the geostrophic array. By determining the vertical structure of westward propagations, the density anomalies attributable to these propagations are isolated and their effect on the geostrophic transport quantified. The standard deviation of the upper mid-ocean transport observed vs that reconstructed from mode 1 are 4.8 and 3.7 Sv, respectively. In total, 52% of the variance of the upper mid-ocean transport at  $26^{\circ}\text{N}$  as observed by RAPID can be attributed to eddies and Rossby waves.