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Separating planetary waves from mesoscale eddies in altimetric dynamic topography maps

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Research has been undertaken to better understand the role of planetary waves in the North Atlantic Ocean. It is well known that the observational characteristics of eddies and planetary waves, observed in altimetric maps, are very similar (Quartly et al., 2006); propagation speed and direction, height signature and spatial scale all fall within a comparable range. Recent work by Chelton et al., (2007) has suggested a significant contribution of ocean mesoscale energy to owe itself to eddy activity. In this work, eddies are identified according to Chelton et al., (2007) and then removed and finally filtered. A model field of idealised eddies, constrained according to output statistics from an eddy tracking algorithm (courtesy of Dudley Chelton) has been produced so as to determine an optimum method for eddy removal. Initial results suggest that a modelled eddy field may be successfully removed, leaving an underlying wave pattern mostly intact. Application of the same process to real data will help contribute to understanding the components of the mesoscale field and results will be shown at the Assembly.