



Eddy-induced internal waves on the continental slope of the North Atlantic western boundary.

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Mesoscale eddies in the ocean are ubiquitous and characterised at mid-latitudes by lengthscales of ~ 100 km and timescales of several months. Eddies are an essential component of the energy redistribution from large scale winds to smaller scale internal waves. Eddies are known to propagate westward at the linear Rossby waves speed, but the processes by which eddies decay are still not fully identified. The present study will test the link between eddies and the generation of internal waves over large topographic features at the North Atlantic western boundary. A two year timeseries of high-frequency measurements from an Acoustic Doppler Current Profiler located 13 km offshore of Great Abaco and at 600 m depth over a seamount are analysed. The eddy strength is measured in the meantime by the zonal gradient of sea surface height anomaly. It is found that internal waves are created at the bottom in the presence of enhanced bottom meridional velocities which is dependent on the eddy polarity and its relation to local mean currents. The proposed process of eddy decay becomes particularly relevant for anticyclonic eddies.