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EFFECTS OF THE PASSAGE OF ATMOSPHERIC CYCLONES OVER THE OCEAN IN THE BRAZIL-MALVINAS CONFLUENCE

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on.The atmospheric region over the Western South Atlantic (WSA), between 15S and 50S, presents an intense cyclogenetic activity, with the frequent passage of cyclones over the ocean. Incidentaly, that is the region of confluence of two major western boundary currents, the Brazil Current and the Malvinas Current, and one of the most eddy-energetic regions of the oceans.

As part of a numerical study of the oceanic circulation in the South Atlantic, a series of experiments with an implementation of the Miami Isopycnic Coordinate Ocean Model (MICOM) were run to investigate the effect of the passage of such atmospheric phenomena. In these experiments, the model was forced initially with monthly means of the wind stress. After reaching a state of statistical equilibrium, the amospheric perturbations were then introduced. Among the objectives of these experiments was an investigation of the effect of the relative size of the cyclones. For that, two main sets of simulations were explored. The diameter of the cylone in one case was twice the size of the other.

The results show that the smaller cyclone generates perturbations in the sea level in a much smaller region, as compared with the larger one. However, the perturbations caused by the smaller cyclone last much longer than those produced by the larger one. Analises of the surface velocity divergence field show the appearance of wave trains along the tracks of the cyclones, with characteristics of those classified as ``Lee Waves" by other authors. The results also show that a considerable part of the energy transfered to the ocean during the passage of the cyclones are transported towards the Brazil-Malvinas confluence region, were it remains trapped long after the cyclones have vanished. This might imply in a possible mechanism for the excitation of meso-scale instabilities in that regi

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