

MODELLING THE EASTERN TROPICAL SOUTH PACIFIC OXYGEN MINIMUM ZONE

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Abstract

Using a coupled physical-biogeochemical model, we carried out an interannual simulation of the eastern Tropical South Pacific (ETSP). This simulation was used to investigate the role of El Niño Southern Oscillation on oxygen-poor waters of the ETSP oxygen minimum zone. Our results show a reduction of the vertical extent of the OMZ during the El Niño phase. During La Nina phase, there is a vertical expansion of oxygen-poor waters. These fluctuations in OMZ extent are due to changes in oxygen supply into its core depth from both lateral margins of the OMZ. The next step in this project will be to investigate the (1) the implication of benthic-pelagic interaction on nutrient and oxygen interannual variability and (2) the role of local physical dynamics and biogeochemical processes on oxygen and nutrient distribution.