

Future evolution of deoxygenation in the Tropical Oceans - project shk00021

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Overview

The interior of the eastern Pacific Ocean is characterized by large Oxygen Minimum Zones (OMZs). The lack of oxygen constrains dramatically the ecosystems and the biogeochemical cycles. Recent observational studies have shown a significant increase of the volume of the low oxygen regions in the last decades. In the previous project we used configurations built on the NEMO modeling framework. The ocean circulation model was coupled to a NPZD biogeochemical model. We previously performed a multidecadal experiment 1948 – 2007 using a nested high resolution configuration (TROPAC 0.1 degree) and several low resolutions experiments permitting to better understand the role of the variability of atmospheric processes (climate oscillations e.g PDO, synoptic variability) In the final phase of the project, we aim to do a synthesis of the results that we obtained in the previous phases of the project by quantifying the processes ventilating the tropical poor oxygen regions in a range of model configurations.