



Mountains to the Sea

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VIEW ABSTRACT

CHARACTERIZATION OF THE MESOSCALE CIRCULATION DURING THE OUTPACE CRU (SOUTHWEST PACIFIC)

The circulation within the Southwest Pacific Ocean is today well established from a climatological point of view. The norther branch of the anticyclonic South Pacific gyre creates the South Equatorial current, a major westward current controlling the circulation in the Southwest Pacific. The complex topography as well as the barotropic instabilities cause intense mesoscale circulation that is well observed with satellites but strongly undersampled with *in situ* observations. The ocean dynamics at mesoscale circulation have an important impact on the ecosystem of this oligotrophic region, and in particular on the development of species involved in the biological carbon pump. We use the *in situ* dataset of the OUTPACE cruise (ADCP, TSG, SVP data) coupled with specifically designed high resolution (1 / 8°) regional altimetric products produced by CLS (with support from CNES) to characterize the mesoscale conditions during the cruise. A preliminary comparison showing that the higher resolution product summing Absolute Geostrophic currents and Ekman currents is in good agreement with *in situ* data. Lagrangian numerical experiments performed with this altimetric product allow us to identify the general surface circulation but also the regional origins and fates of water masses sampled during the cruise and in particular at local scale during the 3 Long-Duration stations. Our results show contrasting mesoscale regimes where simple recirculation in the gyre gives way to more complex, yet still generally westward flowing, circulation.

AUTHORS

Rousselet, L., Aix-Marseille University - MIO, France,
louise.rousselet@mio.osupytheas.fr

De Verneil, A., Aix-Marseille University - MIO, France,
alain.de-verneil@mio.osupytheas.fr

Doglioli, A. M., Aix-Marseille University - MIO, France,
andrea.doglioli@univ-amu.fr

Petrenko, A. A., Aix-Marseille University - MIO, France,
anne.petrenko@univ-amu.fr

Maes, C., LOPS, France, christophe.maes@ird.fr

Blanke, B., LOPS, France, blanke@univ-brest.fr

DETAILS

Oral presentation

Session #: 019

Date: 02/28/2017

Time: 12:45

Location: 313 B

Presentation is given by student: Yes

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