

Comparison between high resolution altimetric products and in situ observations to guide oceanographic cruises

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Abstract:

The inter-disciplinary OUTPACE project conducted an oceanographic cruise in the South-West Pacific in February-March 2015 in order to study the biogeochemical fluxes in this under-sampled region. During the cruise multiple near-real-time satellite-derived products provided by AVISO and CLS were used during the cruise to generate daily maps of SST, surface chlorophyll a concentration and Lagrangian diagnostics allowing to identify fronts, eddies and filaments. This allowed to guide successfully the in situ sampling strategy. This adaptive strategy reveals to be a success as 3 contrasted region were sampled during the cruise. For post-cruise analyses we use specifically designed high resolution regional altimetric products produced by CLS (with support from CNES). Preliminary results show that the addition of the Ekman component considerably increase the agreement between the satellite product and the trajectories of SVP (Surface Velocity Program) floats. At submesoscale, Lagrangian diagnostics such as Finite Size Lyapunov exponents, calculated with altimetric products, allow to detect physical fronts which generally match with in-situ surface tracer gradients.

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