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MEsoSCale dynamical Analysis through combined model, satellite and in situ data (MESCLA): project presentation and first results

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The MESCLA project, funded in the framework of the MyOcean 20009 R&D Call, is focused on the estimation and analysis of the vertical exchanges associated with mesoscale dynamics and of their interannual variability. The rationale for this project comes, on one hand, from the fundamental role played by mesoscale in modulating ocean circulation and the fluxes of heat, freshwater and biogeochemical tracers between the surface and the deeper layers, and, on the other hand, from the high level of uncertainty related to the possible feedback of mesoscale variability on both Earth climate and marine ecosystem functioning. MESCLA presents several original and innovative aspects, related to the proposed methodologies to analyze the physical data, i.e. (1) applying quasi-geostrophic diagnostics to different MyOcean products, both model and observation based, (2) comparing its results with corresponding primitive equation solutions, and (3) testing alternative multivariate techniques to interpolate and combine satellite and in situ observations. A description of the MESCLA approach, activities and results achieved during the first year will be presented.