



Operational glider adaptive sampling during REP10 experiment

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Temperature uncertainties predicted by the 3-D super-ensemble model have been used to define an optimal mission planning for a single glider during last-August REP10 sea trial in the Ligurian Sea. This adaptive sampling strategy was operationally applied during three 2-day cycles from 22 to 28 August 2010. A second glider following a different path in the same area was used to evaluate the benefit of the adaptive sampling procedure in improving the representation of ocean temperature and reducing the model error in comparison to the non-adaptive path. Independent data from gliders, CTD stations, surface CTD and towed Scanfish CTD from R/V Alliance and remote sensing were used to assess the performance of the model.

The first part of the presentation will be focused on the evaluation of different optimal sampling strategies minimizing either the trace, maximum value or maximum eigenvalue of the error covariance matrix. This evaluation is carried out using simulated glider data from a constant 3-dimensional background observation field built during REP10 cruise. Second, the results of REP10 operational adaptive sampling exercise will be presented and the benefits of glider adaptive sampling will be discussed.