DUACS: Toward High Resolution Sea Level Products

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The DUACS system (Data Unification and Altimeter Combination System) produces, as part of the CNES/SALP project, and the Copernicus Marine Environment and Monitoring Service, high quality multimission altimetry Sea Level products for oceanographic applications, climate forecasting centers, geophysic and biology communities... These products consist in directly usable and easy to manipulate Level 3 (along-track cross-calibrated SLA) and Level 4 products (multiple sensors merged as maps or time series) and are available in global and regional version (Mediterranean Sea, Arctic, European Shelves . . .).

The system today merges data from 5 satellites (Jason-3, Sentinel-3A, Jason-2 on its new orbit, Altika, and Cryosat-2). This high number of altimeter missions will contribute to the robustness of the system and the product quality, but also opens new perspectives in terms of resolution. Using the global Synthetic Aperture Radar mode (SARM) coverage of Sentinel-3A, soon completed by Sentinel-3B, and optimizing the LRM altimeter processing (retracking, editing, ...) will allow us to fully exploit the fine-scale content of the altimetric missions. Thanks to this increase of real time altimetry observations we will also be able to improve Level-4 products by combining these new Level-3 products and new mapping methodology, such as dynamic interpolation. Finally these improvements will benefit to downstream products : geostrophic currents, Lagrangian products, eddy atlas. . . Overcoming all these challenges will provide major upgrades of Sea Level products to better fulfill user needs.