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Quality control and validation of the new IOP and GOP ocean products from CryoSat-2

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CryoSat-2 is a huge asset to the oceanographic community, and the exploitation of its data over the ocean represents a welcome additional return for ESA's investment in a mission whose primary objective is to monitor the cryosphere. The CryoSat Project has approved, in the frame of the CryoSat routine phase, the generation of additional ocean products which are available since April 2014. These are the Interim Ocean Products (IOP), normally available within 2-3 day from acquisition, and the Geophysical Ocean Products (GOP), with consolidated orbits and available 30 days after acquisition. To enable their full exploitation by the scientific and operational oceanographic communities, these new ocean products need to be thoroughly quality-controlled and validated. Here we present the results of the scientific quality control performed at the UK National Oceanography Centre (NOC) within the framework of the CryOcean-QCV project. The assessment and quality control of the data is conducted both daily and monthly on a global scale for the L2 IOP and GOP products and includes coverage/completeness, data flow and latency analysis, along-track and crossover analysis, and estimation of error levels and measurement precision. Diagnostics are computed for the sea surface height (SSH), significant wave height (SWH), radar backscatter coefficient (sigma0), wind speed and mispointing parameters.
In addition we present an absolute validation of the altimetric SSH for the GOP product against sea level observations from high-quality tide gauges equipped with Global Positioning System (GPS) receivers. Finally, the validation is extended by comparing the SSH from CryoSat-2 with that from other altimetric missions (Envisat, Jason-1 and Jason-2).