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A consistent, long-term, error-characterised, ocean-colour dataset for the earth observation community.

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In the first phase of the ocean-colour component of the European Space Agency (ESA) Climate-Change Initiative (OC-CCI), atmospheric correction and in-water algorithms for use in the generation of ocean-colour products for climate-change studies were compared, prior to selection. A time series of ocean-colour products from 1997 to 2012 has now been generated, including water-leaving radiances, chlorophyll concentration and inherent optical properties. These products are based on merged SeaWiFS, MODIS and MERIS data that have been corrected for inter-sensor bias, and band-shifted to produce a consistent set of water-leaving reflectances. The products are error characterized on a pixel-by-pixel basis, based on optical characterization of the pixels. Quality-checking and validation are under way. Interesting and novel features of these new products are the length of the time series, error characterisation based on validation and reduced gaps in the data because of data merging as well as the use of a new atmospheric correction model for MERIS processing that successfully retrieves data under sun-glint conditions and the improvement of data quality at high latitudes through the use of atmospheric pathlength information. The first version of the CCI products are now publicly available at http://www.esa-oceancolour-cci.org/ and we invite user feedback to improve the products.