

HIGH spatial and temporal Resolution Ocean Colour Remote Sensing (The HIGHROC Project)

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oral presentation

Session: introduction

The FP7/HIGHROC (“HIGH spatial and temporal Resolution Ocean Colour”) Project has been developing the next generation of optical products for coastal water services. These products are based on both mainstream ocean colour sensors (Sentinel-3/OLCI, VIIRS) and other satellite missions such as the meteorological MSG/SEVIRI sensors and the land-oriented Landsat-8 (L8) and Sentinel-2 (S2) missions. SEVIRI gives data every 15 minutes from a geostationary orbit, offering much better temporal coverage in periods of scattered clouds and the possibility to follow diurnal and tidal processes in cloud-free periods, albeit at reduced spatial resolution. S2 and L8 offer much better spatial resolution, down to 10m (S2), allowing detection of many human impacts invisible at 300m resolution, albeit with lower frequency of acquisition. The HIGHROC project has carried out R&D activities to:

- develop algorithms for processing water colour data (atmospheric correction, suspended particulate matter and chlorophyll a estimation, euphotic depth, etc.)
- carry out in situ measurements, improve the methodologies for making such measurements and use these measurements for calibration and validation of algorithms and products
- develop image processing chains to mass process data from all the relevant missions

Services based on these new products have been supplied to end-users in User Service Trial regions to further refine the products with the objective of providing long-term sustainable services. This core user group covers a range of applications including: coastal water quality monitoring, e.g. the European Union Water Framework and Marine Strategy Framework Directives; Environmental Impact Assessment of activities and constructions at sea; sediment transport associated with offshore construction, sand extraction and dredging activities, etc. This presentation will show some of the highlights of the project, including results from S2, L8 and SEVIRI.