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Water Quality Monitoring of Inland Waters using Meris data

M. Potes (1), M. J. Costa (1,2), R. Salgado (1,2), and P. Le Moigne (3)

(1) Evora Geophysics Centre, University of Évora, Portugal (mpotes@uevora.pt), (2) Physics Department, University of Évora, Portugal (mjcosta@uevora.pt , rsal@uevora.pt), (3) CNRM/GMME/MOSAYC Météo-France (patrick.lemoigne@meteo.fr)

The successful launch of ENVISAT in March 2002 has given a great opportunity to understand the optical changes of water surfaces, including inland waters such as lakes and reservoirs, through the use of the Medium Resolution Imaging Spectrometer (MERIS). The potential of this instrument to describe variations of optically active substances has been examined in the Alqueva reservoir, located in the south of Portugal, where satellite spectral radiances are corrected for the atmospheric effects to obtain the surface spectral reflectance.
In order to validate this spectral reflectance, several field campaigns were carried out, with a portable spectroradiometer, during the satellite overpass. The retrieved lake surface spectral reflectance was combined with limnological laboratory data and with the resulting algorithms, spatial maps of biological quantities and turbidity were obtained, allowing for the monitoring of these water quality indicators.
In the framework of the recent THAUMEX 2011 field campaign performed in Thau lagoon (southeast of France) in-water radiation, surface irradiation and reflectance measurements were taken with a portable spectrometer in order to test the methodology described above. At the same time, water samples were collected for laboratory analysis.
The two cases present different results related to the geographic position, water composition, environment, resources exploration, etc.
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