

HIGH TEMPORAL RESOLUTION MAPPING OF TOTAL SUSPENDED MATTER IN BELGIAN COASTAL WATERS WITH SEVIRI DATA: A FEASIBILITY STUDY

Neukermans Griet and Kevin Ruddick

Royal Belgian Institute of Natural Sciences (RBINS), Management Unit of the North Sea Mathematical Models (MUMM), Gulledele 100, 1200 Brussel, Belgium
E-mail: g.neukermans@mumm.ac.be

This study aims to investigate the potential of The Spinning Enhanced Visible and InfraRed Imager (SEVIRI) of the 'Meteosat Second Generation' (MSG) geostationary satellite system for suspended matter mapping in Belgian Coastal Waters. The SEVIRI radiometer has 12 spectral channels with a spatial resolution of 3km in all channels except the High Resolution Visual (HRV) channel, where the resolution is 1km. Data is available in near real time **every 15 minutes**. A test data set was obtained from the SEVIRI Archive of the Royal Meteorological Institute of Belgium (RMIB), covering 15 consecutive days from 08/09/2006-22/09/2006. SEVIRI data values were transformed into reflectance values using a simple atmospheric correction algorithm. Total suspended matter is then estimated from reflectance at the higher spatial resolution offered by the HRV band. This preliminary study provides the basis for future mapping of total suspended matter from geostationary sensors at high temporal resolution. A future generation of geostationary ocean colour sensors opens the perspective of studying high frequency dynamics of the coastal ecosystem (resuspension of bottom sediments, growth and decay of algal blooms) as well as mitigating the problems of cloudiness encountered with the current generation of polar-orbiters (MODIS, MERIS, SeaWiFS). This first feasibility study with SEVIRI will address questions of sensor sensitivity, wavelengths needed for atmospheric correction and the use of a high spatial resolution broadband channel.