Contribution to the Report of the JERICO WP 10 Workshop, Villefranche, 16-18 October 2013

Fritz Francken and Matthias Baeye

Task 10.6

In the framework of this task, a market study has been performed to select the most appropriate smart buoy to establish the relationship between surface (measured in situ and remotely) and near-bed (in situ tripod) concentration of suspended particulate matter (SPM). The acquisition of a smart buoy however appeared to be out of financial scope. Therefore it was decided to acquire a self-contained OBS-5+ system that could be attached to a navigation buoy.
In close cooperation with DAB Vloot, the owner of the navigation buoys, the AW-buoy was selected, which lies in a water depth of about 10 m, at a distance of about 6 km from the Zeebrugge harbor (see Figure 1).
Before deployment, series of calibration tests, both in lab and in situ, were performed on the OBS-5 sensor.
A first test with the OBS-5+ sensor was executed on September 25 2013 to test the attachment of the sensor to the navigation buoy. From September 26 2013 till October 16 2013, the OBS-5+ sensor was deployed for a period of 20 days, during which a storm passed by (October 8-9 2013). The deployment worked well and a good series of measurements were collected (see Figure 2).
The OBS-5+ sensor was redeployed on November 28 2013 and will collect surface SPM concentration measurements in continuous mode.
Once sufficient data have been gathered, covering enough variation in vertical and temporal SPM concentration, correlation with both satellite imagery and data from the benthic lander coastal observatory, will be investigated.

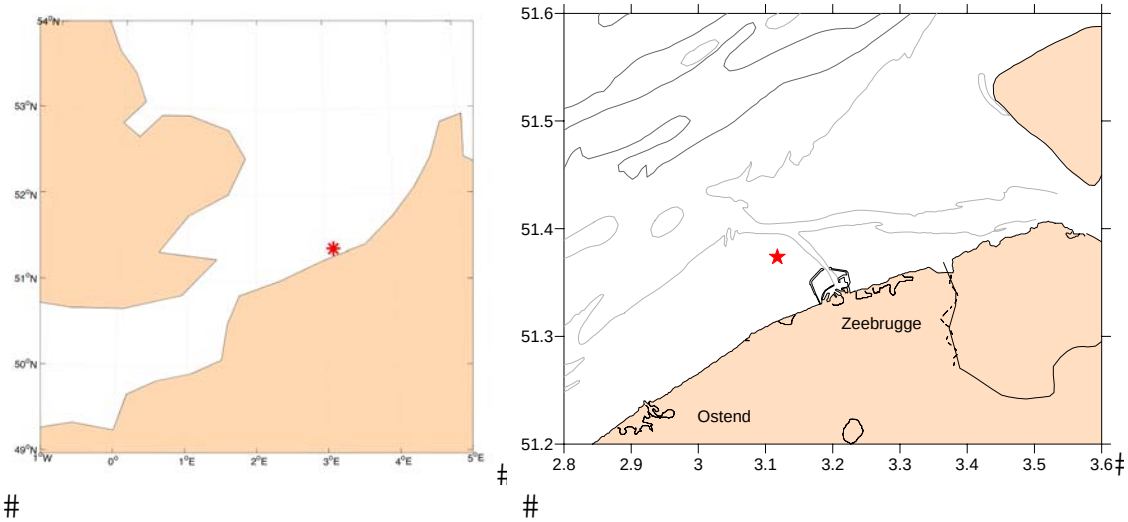
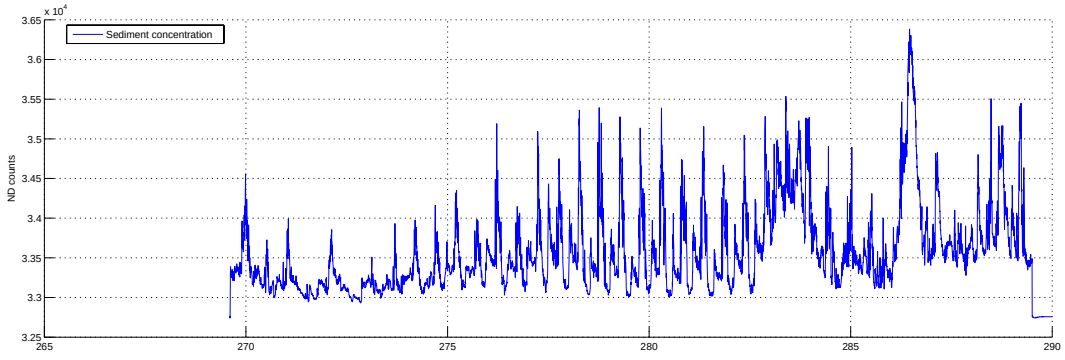


Figure 1: Location of the OBS-5 sensor, attached to the AW-buoy.



#

Figure 2: Dataseries of OBS-5 sensor, unprocessed Near Detector counts. Time in Julian days. First trial.

#