

## PROBA-V for Turbidity mapping in turbid coastal areas

Sindy Sterckx, Els Knaeps, Liesbeth De Keukelaere

To monitor the coastal areas a 250 m spatial resolution is often put forward (e.g. MODIS 250 m channels, MERIS, Sentinel-3). However this spatial resolution might be inadequate for small scale features in near shore areas such as ports and estuaries i.e. areas which are facing intensified anthropogenic pressures from maintenance of capital dredging activities, large scale construction works etc. In such cases, a 100 m PROBA-V product might be a significant added value. Although designed as a land mission only, the PROBA-V instrument, providing a daily coverage at 300 m and a 5-daily coverage at 100m resolution, opens opportunities for the retrieval of coastal products. Here we present algorithms for atmospheric correction and turbidity applied to the PROBA-V coastal data. For the atmospheric correction of the PROBA-V data, the in-house developed OPERA, OPERational Atmospheric correction code, is used. Turbidity is estimated based on the PROBA-V RED band following the semi-analytical algorithm described in Nechad et al. (2009, 2010). Results for a 2-year PROBA-V time series over the North Sea are presented. Validation is performed for the aerosol optical thickness (AOT), reflectance and turbidity products based on in-situ information from Aeronet(-OC) stations, fixed turbidity buoys and dedicated *in situ* sampling. Finally an indirect validation is performed through cross-comparison of spatial and temporal patterns against MODIS 250 Turbidity data .

Flemish Institute for Technological Research (VITO), Remote Sensing Unit, 2400 Mol, Belgium –  
[sindy.sterckx@vito.be](mailto:sindy.sterckx@vito.be); [els.knaeps@vito.be](mailto:els.knaeps@vito.be); [Liesbeth.Dekeukelaere@vito.be](mailto:Liesbeth.Dekeukelaere@vito.be)