Geophysical Research Abstracts Vol. 17, EGU2015-10632-2, 2015 EGU General Assembly 2015 © Author(s) 2015. CC Attribution 3.0 License.



## Determination of chlorophyll-a concentration under desertic dust.

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One major challenge in ocean colour remote sensing is the so-called atmospheric correction. It consists in removing the atmospheric signal from the signal measured from space by a radiometer. If an accurate atmospheric correction is performed, it is thus possible to invert the water-leaving reflectance signal to estimate in-water properties such as the chlorophyll-a concentration.

Ocean colour data centers proposed a standard atmospheric correction scheme specific to the sensor they processed (SeaWiFS, MERIS, MODIS, VIIRS, ...). They are accurate in most situations (open ocean waters, weakly absorbing aeorols) but fail in some specific cases such as the presence of desertic dust in the atmosphere. In some region, they can lead to exclude large regions of the image from the treatment.

In this work, we propose an algorithm to perform the atmospheric correction and to determine the chlorophyll-a concentration under desertic dust. This algorithm, called SOM-NV, is a combination of a classification of the aerosol type using a self-organizing map and an inversion scheme called NeuroVaria. It has been applied to the Senegalo-Mauritanean upwelling using SeaWiFS, MODIS and VIIRS data. The results of SOM-NV have been compared with in-situ measurements (HPLC and microscope) sampled during the UPSEN (UPwelling SENegal) campaigns in 2012 and 2013.