

TD 1 – Marine Optics
Analysis of IOP spectra using TARA data

Instructions for Report 1 of TD OPB 305

Send in pdf format before **5 October 2020** to my email (anne.petrenko@mio.osupytheas.fr) using this format: Rapport1_OPB305_TD_2020_Famillyname.pdf. Maximum 1 page (single-sided); Method: no more than 3 lines (no need to cite the site); explain the main result(s) using supporting figure(s); don't forget the figure legends and captions need to be cited in the text.

Also send me you Matlab script as: Script_OPB305_TD1_2020_Famillyname.m

On the web site

<http://misclab.umeoce.maine.edu/research/research19.php>

download the AC data file(s) collected during the TARA missions

EXERCISE

1. Produce spectra of the absorption coefficient, a , and the attenuation coefficient c (either plotting a and c in the same figure or as two separate figures using subplot to stack them vertically or horizontally)
2. Perform a spatio-temporal variability analysis of your choice and try to interpret your results based on you assumptions regarding water types and constituents (phytoplankton community, NAP...).

See related articles:

http://misclab.umeoce.maine.edu/documents/Bossetal_2013.pdf

with validation here

http://misclab.umeoce.maine.edu/documents/Werdelleetal_2013.pdf

and here

<http://misclab.umeoce.maine.edu/documents/Brewinetal2015.pdf>

Note on Matlab (Check the TD directory at https://people.mio.osupytheas.fr/~petrenko/TEACHING/OPB305/TD_OPB305/Trucs_matlab.pdf)

To import a data file: if the file has no header, use “load”; if there is a text header use “importdata” and specify the number of header lines and the column separator. Depending on the format, the first columns (e.g., date and time) are not always taken into account during the file import with Matlab.

```
>>tara2009_270cp = importdata('Tara_ACS_apcp2009_270cp.txt',' ', 31);  
>>plot(lambda,tara2009_270cp.data(:,5:end))
```

CAUTION to use this code, you first need to define the wavelengths contained in *lambda* (they are not the same in all the files).