

**OPB 305 - TD 2 – Marine Optics & Biogéochimie
calculating K_{PAR} using PHYBIO data**

Instructions for Report 2 of TD OPB 305

Send in pdf format before 12 October 2020 (10h) to my email (anne.petrenko@mio.osupytheas.fr) using this name format: Rapport_OPB305_TD2_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 your Matlab script as: Script_OPB305_TD2_2020_Famillyname.m.

a) On the website/

http://www.com.univ-mrs.fr/~petrenko/TEACHING/OPB305/TD_OPB305

download the descending CTD cast data files collected during the PHYBIO 2018 and 19 campaigns (one for each campaign; indicate it in the table).

b) Reminder about logarithmic scales

Produce the figures using:

```
yy=1:10;gg=exp(yy);  
plot(yy,gg);grid  
figure(2)  
semilogy(yy,gg); grid
```

Check the gg values on the ordinate axis.

c) EXERCISE (to be handed it)

1. Create a plot of PAR at a chosen station.
2. What is the mean surface PAR (value and unit).
3. Convert this value into an energy (value and unit) and explain the underlying assumptions made
4. Calculate K_{PAR} at the same station (you can plot it into the same figure if the axis limits are suitable)
5. What is the unit of K_{PAR} ?
6. What is the accuracy of this estimate?
7. Do the same exercise again for the PAR profile collected at Station k on 22 March 2013 (TD_OPB305/CTD/S2013_0322_ST_K_CTD_2.asc)

Note on Matlab to import a data file (see notes on TD1). 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. Caution, depending on the file format, the first columns (up to the date and time) are not always taken into account during the file import with Matlab.