

# DONAR

OpenEarthTools has a matlab package for reading DONAR ascii dia files. Please [join Openearth](#) to be able to access [the svn repository](#) . With just 4 lines of Matlab code you can work with a virtual aggregate of many dia files:

```
File = donar.open_file({'a1.dia','a2.dia',...,'all.dia'})
      donar.disp(File)      % show contents of 1 or many files

-----+...
File | WNS | # of | # of | DONAR | CF |
index|code|blocks| values| name | standard_name [UDunits] |
-----+...
  1 | 1926 | 11 | 46414 | INSLG | downwelling_radiance_in_sea_water [microEinstein] |
  2 | 209 | 11 | 69671 | %O2 | fractional_saturation_of_oxygen_in_sea_water [0.01] |
  3 | 2392 | 11 | 52981 | GELDHD | sea_water_electrical_conductivity [mS/m] |
  4 | 360 | 11 | 167320 | O2 | mass_concentration_of_oxygen_in_sea_water [mg/l] |
  5 | 377 | 11 | 162096 | pH | sea_water_ph_reported_on_total_scale [1] |
  6 | 44 | 11 | 81036 | T | sea_water_temperature [degree_Celsius] |
  7 | 5108 | 11 | 143827 | TROEBHD | sea_water_turbidity [NTU] |
  8 | 555 | 11 | 166163 | FLUORCTE | sea_water_fluorescence [1] |
  9 | 559 | 11 | 167318 | SALNTT | sea_water_salinity [1] |
 10 | 7647 | 11 | 2259 | GELSHD | speed_of_sound_in_sea_water [m/s] |
 11 | 7788 | 11 | 46392 | INSLG | downwelling_longwave_radiance_in_air [microEinstein] |
-----+...

[Data,...
Meta] = donar.read(File,1,6) % variable resides in 6th column
[CTD,...
CTDm] = donar.ctd_struct(Data,Meta)
```

Here we display the `contents.m`, for the rest of the documentation refer to the Matlab documentation convention: `help donar` and proceed with the clickable links.

donar toolbox package - Matlab package to inquire and read donar dia ascii files

MAIN FUNCTIONS:

open_files	- open and scan multiple donar files
open_file	- scan internal blocks of 1 donar dia file + aggregate into variables
read	- read one variable from donar dia file (aggregating blocks)
disp	- displays overview of contents of donar (blocks + variables)

Post-read functions: interpret as CTD profile or FerryBox/ScanFish trajectory:

open_file_test	- test donar.open_file, to test delivered dia batches
open_files_test	- test donar.open_file, to test aggregated variables
trajectory_struct	- convert matrix output from read to struct
trajectory2nc	- write 2D FerryBox or 3D Meetvis trajectory to netCDF
trajectory_overview_plot	- plot maps and timeseries of trajectory
ncwrite_trajectory	- write trajectory to netCDF-CF file
ctd_struct	- convert matrix output from read to struct
ctd_timeSeriesProfile	- merge timeseries of profiles at 1 location from random collection of profile/locations
ctd_timeSeriesProfile2nc	- write timeSeriesProfile to netCDF
ctd_timeSeriesProfile_plot	- plot timeseries of profiles at 1 location
ncwrite_profile	- write trajectory to netCDF-CF file

Low-level functions (only for developers):

scan_block	- fast scan donar dia data block without reading data
scan_file	- scans an entire donar file: all blocks
read_header	- reads donar header from file
merge_headers	- compiles variable information from blocks
read_block	- reads one block of donar data
squeeze_block	- squeezes out data flagged as 999999999999
parse_coordinates	- convert donar value to coordinate [degrees]
parse_time	- parse time in block into decimal days since reference day
flag_block	- flag donar values for unrealistic values
headercode2attribute	- translate donar datamodel property to global netCDF attribute
resolve_clim	- get clim for a WNS
resolve_ehd	- convert donar units code to english long_name, CF UDUNITS units,...
resolve_wns	- convert donar code to english long_name, CF standard name, ...

Example:

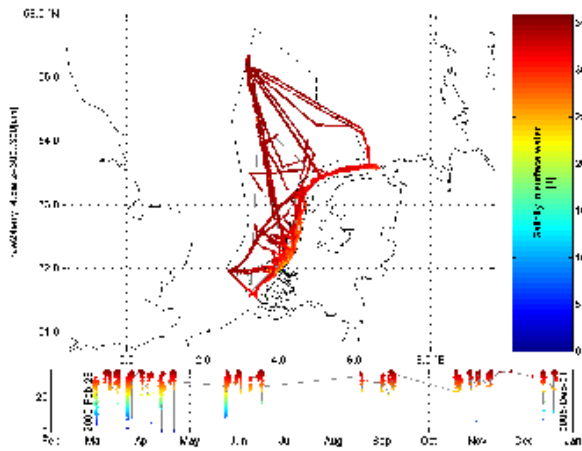
```
F = donar.open_file(diafile<s>)
donar.disp(File) % show contents of 1 or many files
[D,M] = donar.read(File,1,6) % variable resides in 6th column
```

See also: [rws\\_waterbase\\_get\\_url](#)

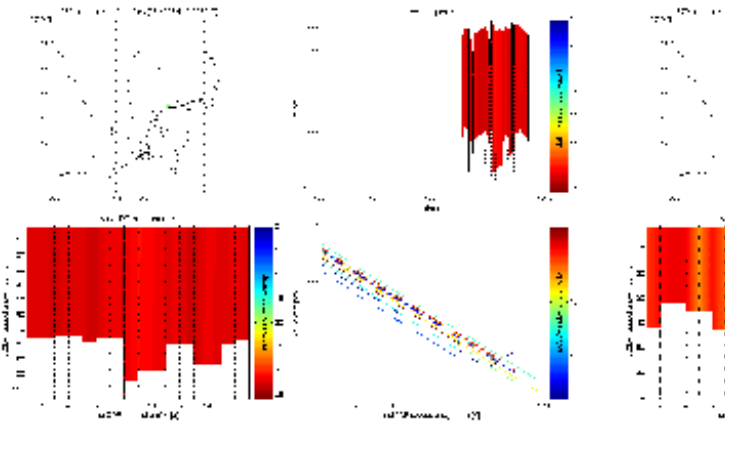
[http://www.rws.nl/water/waterdata\\_waterberichtgeving/watergegevens/](http://www.rws.nl/water/waterdata_waterberichtgeving/watergegevens/)

<http://www.helpdeskwater.nl/onderwerpen/kust-zee/scheepvaart/historische-gegevens/>

<https://data.overheid.nl/data/dataset/rws-donar-metis-service-rijkswaterstaat>

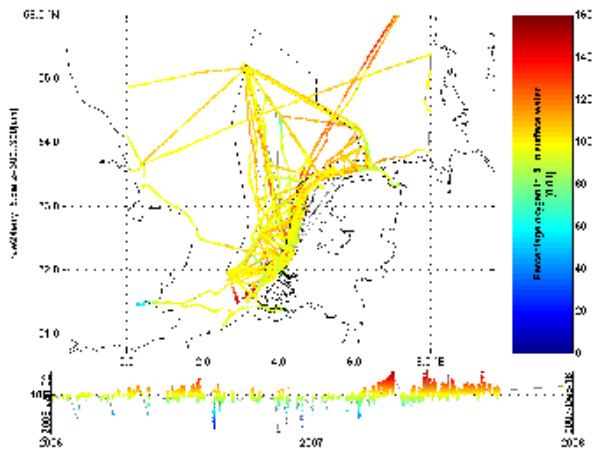


FerryBox data 2004-2005 plotted with donar.trajectory\_overview\_plot.m



CTD data plotted with donar.ctd\_timeSeriesProfile\_plot.m

CTD data



FerryBox data 2006-2007 plotted with donar.trajectory\_overview\_plot.m