

NCK 2015 sprintsession grain size data

Invitation:

Prior to the [2015 NCK days](#) icebreaker, [OpenEarth.nl](#) organizes a hands-on sprint session to explain how to access and visualize some great open access core-description and grain size datasets of the Dutch coast:

- i) Sediment Atlas WaddenZee (RWS): 7500(!) distribution curves in Marsdiep-EmsDollard
- ii) TNO 13.000(!) core descriptions for the Dutch continental shelf via NODC/SeaDataNet (and much, much more data available via [DINOloket.nl](#))
- iii) TNO interpolated dz10, dz50, dz90 maps with 200m resolution for Dutch Continental Shelf
- iv) Along the Dutch beaches, grain sizes for dune safety assessment (RWS)

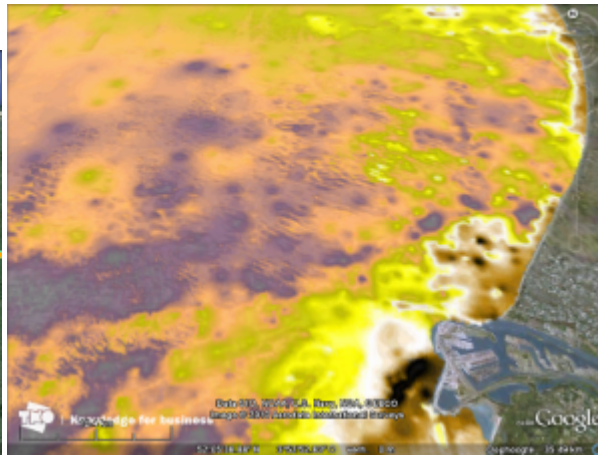
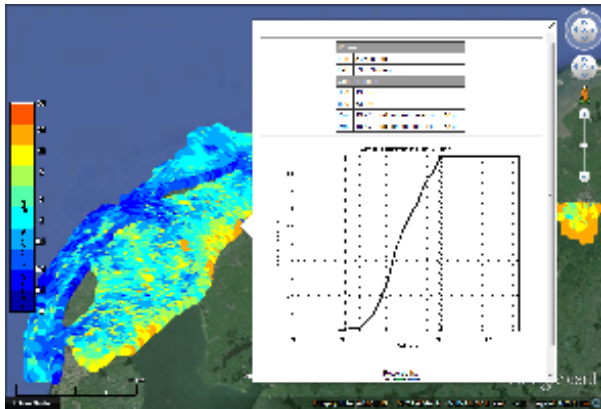
During this sprint session you'll learn how to work with these free data in Matlab and/or python. Bring your own laptop to work with the data, and take home your data products and visualizations.

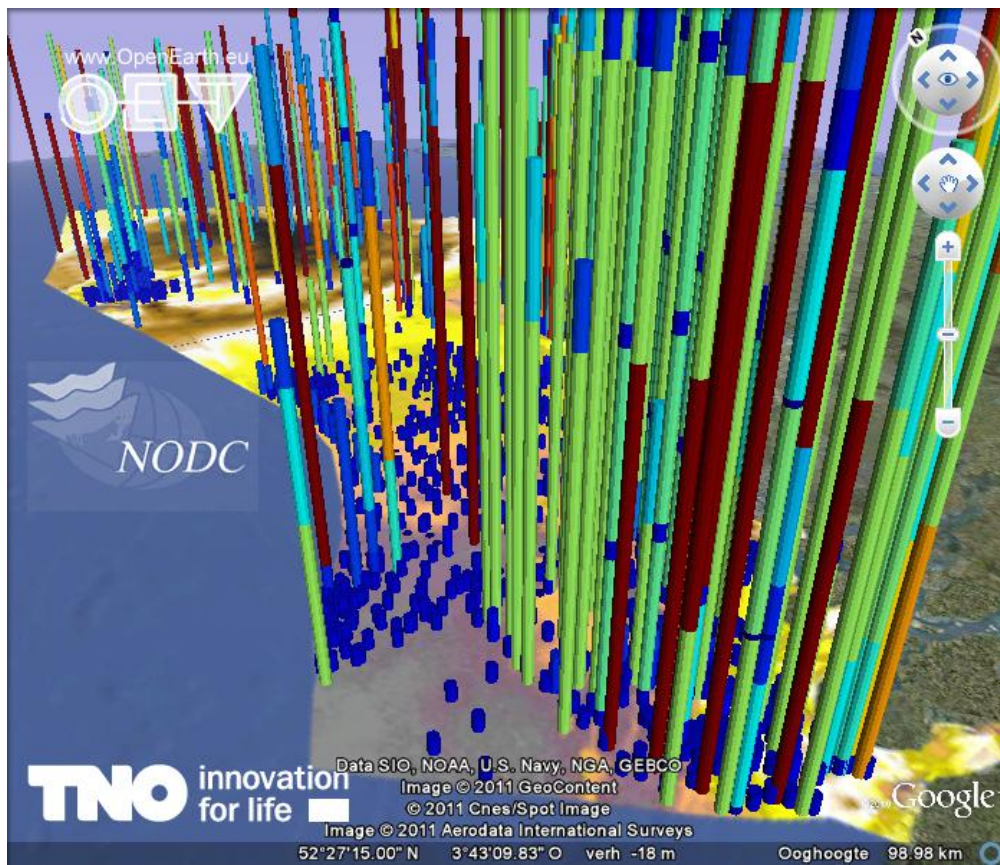
Time: March 18th, 13:30-17:00 (max 10 participants, sponsored by NCK)

Location: <http://www.ijgenweisschoorl.nl> (where icebreaker starts at 18:30)

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Flyer: [NCK days 2015 sprintsession north sea grain sizes.pdf](#)





Course information:

Access information for the data can be found at [Dataset documentation](#).

You can download netCDF files (to prevent wifi overload) with [BITSadmin](#). An example is for the TNO gain size maps is:

```
set from=http://opendap.deltares.nl/thredds/fileServer/opendap/tno/ncp/
set into=d:\opendap\tno\

bitsadmin /transfer Job001 /download /priority normal %from%slib_juli2007.nc %into%slib_juli2007.nc
bitsadmin /transfer Job001 /download /priority normal %from%grind_fbr2007.nc %into%grind_fbr2007.nc
bitsadmin /transfer Job001 /download /priority normal %from%dz10_juli2007.nc %into%dz10_juli2007.nc
bitsadmin /transfer Job001 /download /priority normal %from%dz50_juli2007.nc %into%dz50_juli2007.nc
bitsadmin /transfer Job001 /download /priority normal %from%dz90_juli2007.nc %into%dz90_juli2007.nc
```

You can access *subsets* these files with the Matlab netCDF package called [ncread](#) and with the python package [netcdf4-python](#), see our [Matlab example](#) and

python example.

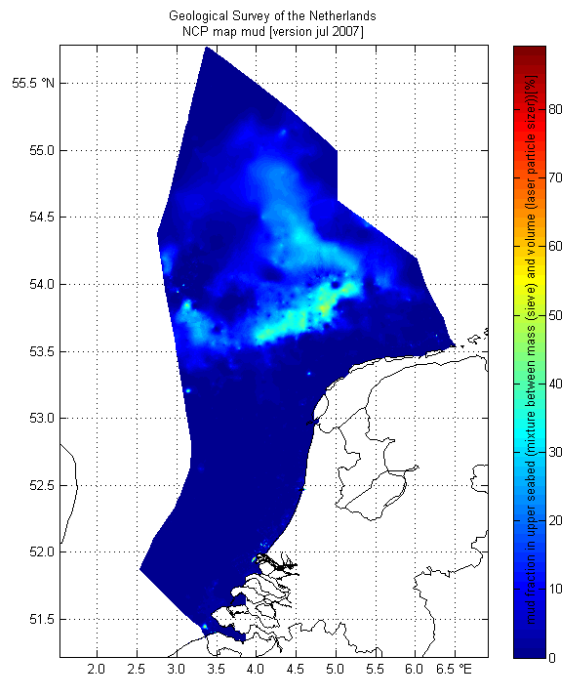
TNO grain size maps

A Matlab simple example how to make a publication quality figure is given here

```
% load openearthtools for handy tools such as nc2struct, pcolorcorcen, colorbarwithvtext, tickmap, axislat,
findfont
oetsettings
%% load data (local cache), D contains data, M contains all metadata
[D,M] = nc2struct('slib_juli2007.nc')

%% load data (via opendap)
L = nc2struct('http://opendap.deltares.nl/thredds/dodsC/opendap/deltares/landboundaries/northsea.nc')

%% plot
pcolorcorcen(D.longitude,D.latitude,D.mud)
colorbarwithvtext([M.mud.long_name,['',M.mud.units,']']) % add text inside colorbar to maximize use of paper
space. automatically use metdata from netCDF file
tickmap('ll') % add lat/lon as last tickmarks, no need for space, that dilute efficient use of paper space
(google: Edward Tufte)
grid on
axislat % fix aspect ratio
plot(L.lon,L.lat,'k')
set(findfont,'fontsize',8)
title({M.nc_global.institution,'NCP map mud [version jul 2007]'}) % automatically use metdata from netCDF file
as title
print2screenize('slib_juli2007')
```



We used this image as Fig. 8 in our 2011 paper [Mechanisms controlling the intra-annual mesoscale variability of SST and SPM in the southern North Sea](#).

Sedimentatlas waddensea

A second Matlab example is a dataset used for Fig 9 in our 2008 paper [Modeling large-scale cohesive sediment transport affected by small-scale biological activity](#). Here's an example how to work with these data, find more script in

https://svn.oss.deltares.nl/repos/openearthrawdata/trunk/rijkswaterstaat/sedimentatlas_waddenzee/scripts/.

```

%oetsettings
%% load data
F      = 'http://opendap.deltares.nl/thredds/dodsC/opendap/rijkswaterstaat/sedimentatlas_waddenzee/korrel.nc';
D.lon   = ncread(F, 'lon');
D.lat   = ncread(F, 'lat');
D.cumphi = ncread(F, 'cumphi');
D.diameter = ncread(F, 'diameter');
[D.x,D.y] = convertCoordinates(D.lon,D.lat, 'CS1.code',4326, 'CS2.code',28992);% wgs84 to RD
fraction = 10; % fraction to work with

%% add coastal data
L = nc2struct('http://opendap.deltares.nl/thredds/dodsC/opendap/deltares/landboundaries/northsea.nc')
[L.x,L.y] = convertCoordinates(L.lon,L.lat, 'CS1.code',4326, 'CS2.code',28992);% wgs84 to RD

%% plot data
caxis      ([0 100])
scatter     (D.x,D.y,20,D.cumphi(fraction,:),'.')
colorbarwithvtext(['D < ',num2str(D.diameter(fraction)), ' \mum [%]'])
axis equal
grid on
tickmap     ('xy')
axis(axis)
hold on
plot(L.x,L.y,'k')
box on
print2screenize(['sedimentatlas_waddenzee_fraction_',num2str(D.diameter(fraction)), 'mm'])

%% plot in Google Earth
KMLscatter(D.lat ,D.lon ,D.cumphi(10,:), 'fileName', ['sedimentatlas_waddenzee.kml'], ...
'CBcolorTitle', ['D < ',num2str(D.diameter(fraction)), ' \mum [%]'], ...
'CBcolorbarlocation', {'W'});

```

