

# Historic of sea ice concentration

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This document presents an overview of the methodology used to extract the historic of sea ice concentration of the stations visited by the Amundsen in 2016 (project Green Edge).

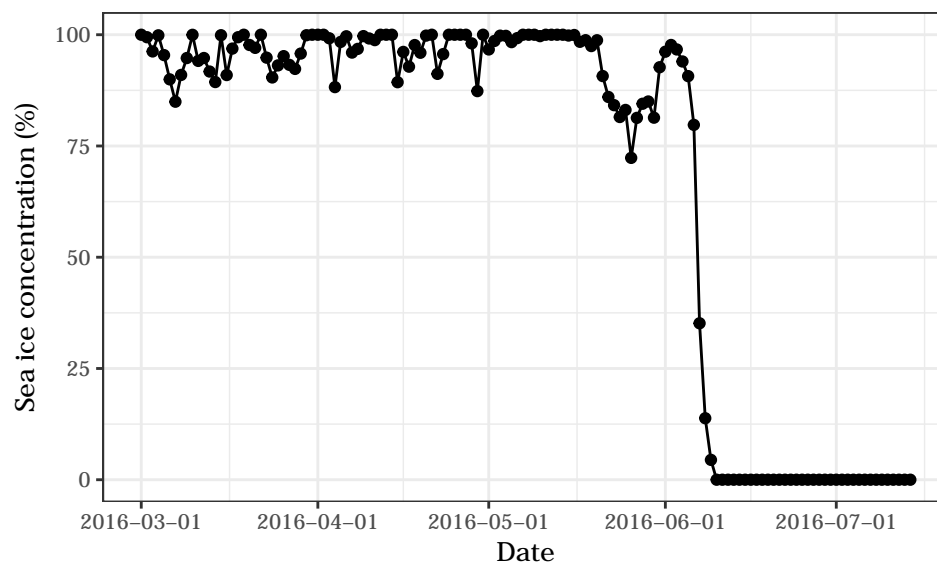
## Data

Sea ice concentration has been extracted from AMSR2 radiometer on a 3.125 km grid. At each Amundsen station, the historic of sea ice concentration was extracted between 2016-03-01 and 2016-07-14. Sea ice concentration was extracted from the closest pixel using the Euclidean distance between ship position and the center of each pixel.

File name is *ice\_history\_data.csv*. It can be opened in Excel although you will have to select the first column and click Data – Convert to choose the separator as coma. You can filter the data per station –which will give you the changes of sic (sea ice coverage) over time (ice\_date being the date of sic estimation) or by ice\_date to see the status of sea ice coverage at all stations for a given day.

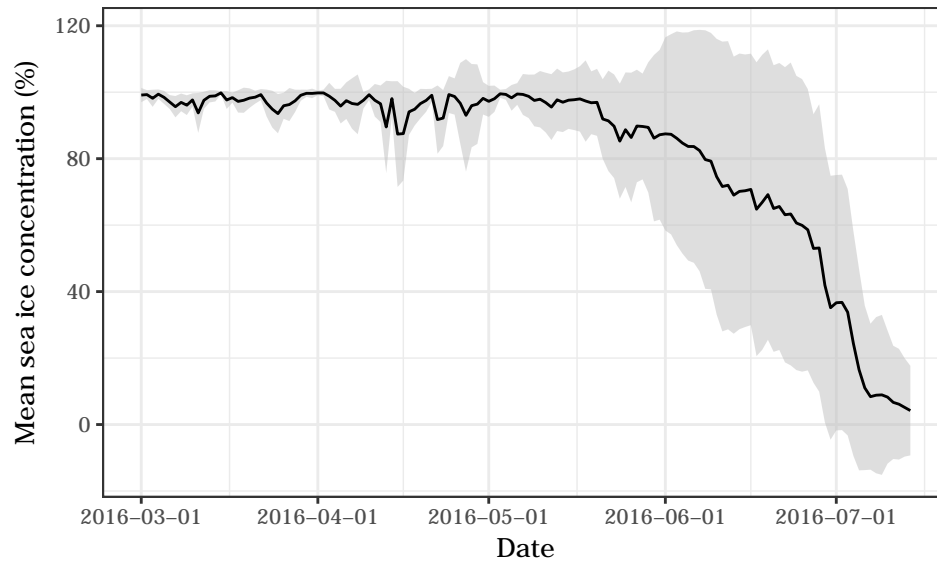
## Example

This is an example for station **G104**.



## Average sea ice concentration

This is the averaged ( $\pm$  S.D.) sea ice concentration between 2016-03-01 and 2016-07-14



## Other sources of data

The infamous “ice line” is also available on our glider’s webpage. For every day since the beginning of March 2016, you will find the “arctic\_line\_yyyddd.kmz” file there, however these data cover the entire arctic area so some modifications might be necessary:

<http://gliders.takuvik.ulaval.ca/kmz/archive/>

Another source of sea ice line data is the NOAA website. Data @NatIce are available in kmz, text and shapefiles format. These files are GIS so they are meant to be read by a GIS software:

[http://www.natice.noaa.gov/products/daily\\_products.html](http://www.natice.noaa.gov/products/daily_products.html)

## How to cite the data

If you use this dataset please cite University of Hamburg and the following article:

Beitsch, A.; Kaleschke, L.; Kern, S. Investigating High-Resolution AMSR2 Sea Ice Concentrations during the February 2013 Fracture Event in the Beaufort Sea. *Remote Sens.* 2014, 6, 3841-3856, doi:10.3390/rs6053841

Paper Open Access available online: <http://www.mdpi.com/2072-4292/6/5/3841>

For citations of the data itself you may use:

Kaleschke, L. and X. Tian-Kunze (2016), “AMSR2 ASI 3.125 km Sea Ice Concentration Data, V0.1”, Institute of Oceanography, University of Hamburg, Germany, digital media ([ftp-projects.zmaw.de/seaice/](ftp://ftp-projects.zmaw.de/seaice/)), [BEGIN DAY/MONTH/YEAR - END DAY/MONTH/YEAR].

## Detailed information

Detailed information can be found in the following official README file: <ftp://ftp-projects.zmaw.de/seaice/AMSR2/README.txt>