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# Read Argo raw files

# Interpolate Z-direction (narrow depth levels)

Interpolation specs: Grid dimensions

# Argo Temperature and Salinity values

# Argo profile Classification

This sections makes two types of Argo classification, which are: Regional classification (Sub) regional Classification

* Bothian Sea [\*] (BOS) [61.5?N,19?E]
* Gulf of Finland (GOF)
* Northern Baltic Proper (NBP)
* Arkona Basin [\*] (ArB) [55?N, 16?E]

[\*] data to be presented in this validation. These regions contain both Argo and mooring data (i.e. allow study of MLD Argo Vs Mooring). Seasonal Classification

* Winter (wnt): December, January, February
* Spring (spr): March, April, May
* Summer (sum): June, July, August
* Autumn (aut): September, October, November

## Plot Study region locations

# Regional Argo Selection Bothian Sea

## Plot Geolocation: ARGO floats within Baltic region

### 1) ALL Argo floats

### 2) Argo floats in Winter

### 2) Argo floats in Spring

### 3) Argo floats in Summer

### 4) Argo floats in Autumn

# Argo Averaged profiles (T and S) in each region

Plot TS Profiles Limits axes

## [Argo] Plot average Seasonal (winter/summer) profiles in BOS region

# [Mooring] Read mooring data (location: 50N 145W)

* There is no mooring data at the Baltic (at least not included in the indata)
* Alternatively plot T and S analysis profiles.

## Satellite and Argo comparison againts PAPA mooring (BOXPLOTS)

[PAPA+ARGO] Boxplot T and S at PAPA location Show example of floats operating at searching destance from PAPA mooring location.

itime = itime\_start; % first day of the month (i.e. use SSS colored map)

## [Mooring+ARGO+SAT] Compare Salinity at 10 m depth from Mooring and ARGO Vs Satellite data

**Not done because there are not mooring stations.**

In the previous sections, plots showed that MLD is as large as 100 and 80 m in winter and summer respectively. Thus it is possible to assume that salinity at 10 m depth should compare well with the satellite retrieved salinity at skin of the of skin of the ocean (i.e. top milimeters of the surface).

Make scatterplot of salinity data including:

* Mooring salinity at 10 m (only one location)
* Argo salinity at 10 m (variable location)
* SSS map (satellite) surface map

## SSS-BEC (sss\_bec) at mooring location

* Baltic+ product ranges: February 2011- December 2013
* Red SSS data at each study region (i.e. BOS, GOF,NBP and ArB).
* This section uses the SSS-BEC data loaded in the previous section.
* Data is in format of the PAPA mooring station (i.e. the fiudecial reference)
* The seasonal classification uses the seasonal index created using time\_papa (see above sections)
* Mooring location with a searching radius 'r' (km)
* Background SSS-BEC product --> Show the greater spatial coverage of satellite product