

DATA ANALYSIS

USING

FERRET

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INCOIS

CONTENTS

Regridding Data

Space and time

Time Series Analysis

Mean

Standard Deviation

Regression analysis

Correlation Analysis

Fast Fourier Transform

Low pass filter

REGRIDDING DATA

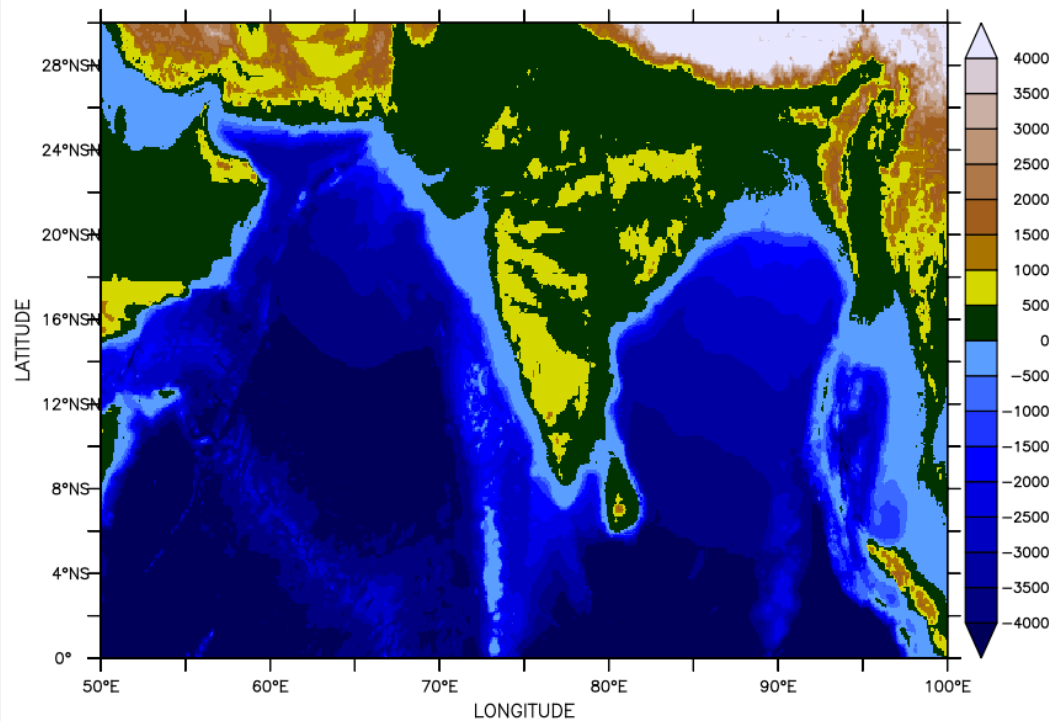
- **Convert data resolution**
 - **LOW** → **HIGH**
or
 - **HIGH** → **LOW**
- Which can be done in **Horizontal** (X ,Y),**Vertical** (Z) and also in **Time** (T)
- **Purpose**
 - Easy for computation in the case of high to low (with out loosing information)
 - Compare two data set which has different grids

REGRIDDING DATA

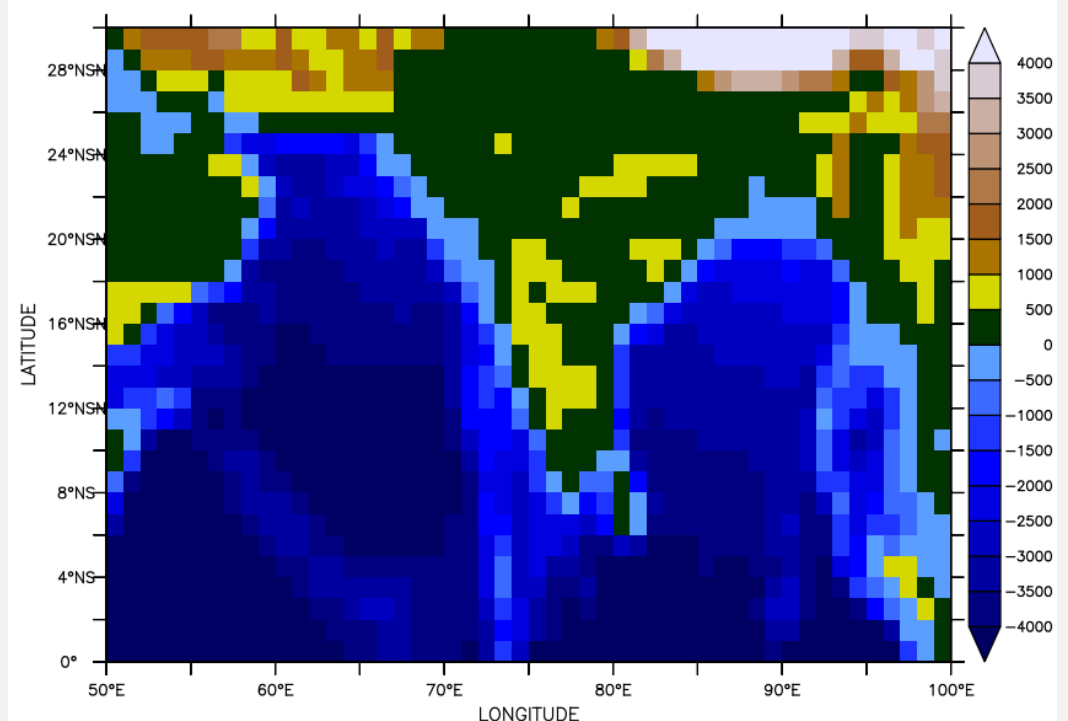
High spatial resolution

ETOPO

Low spatial resolution

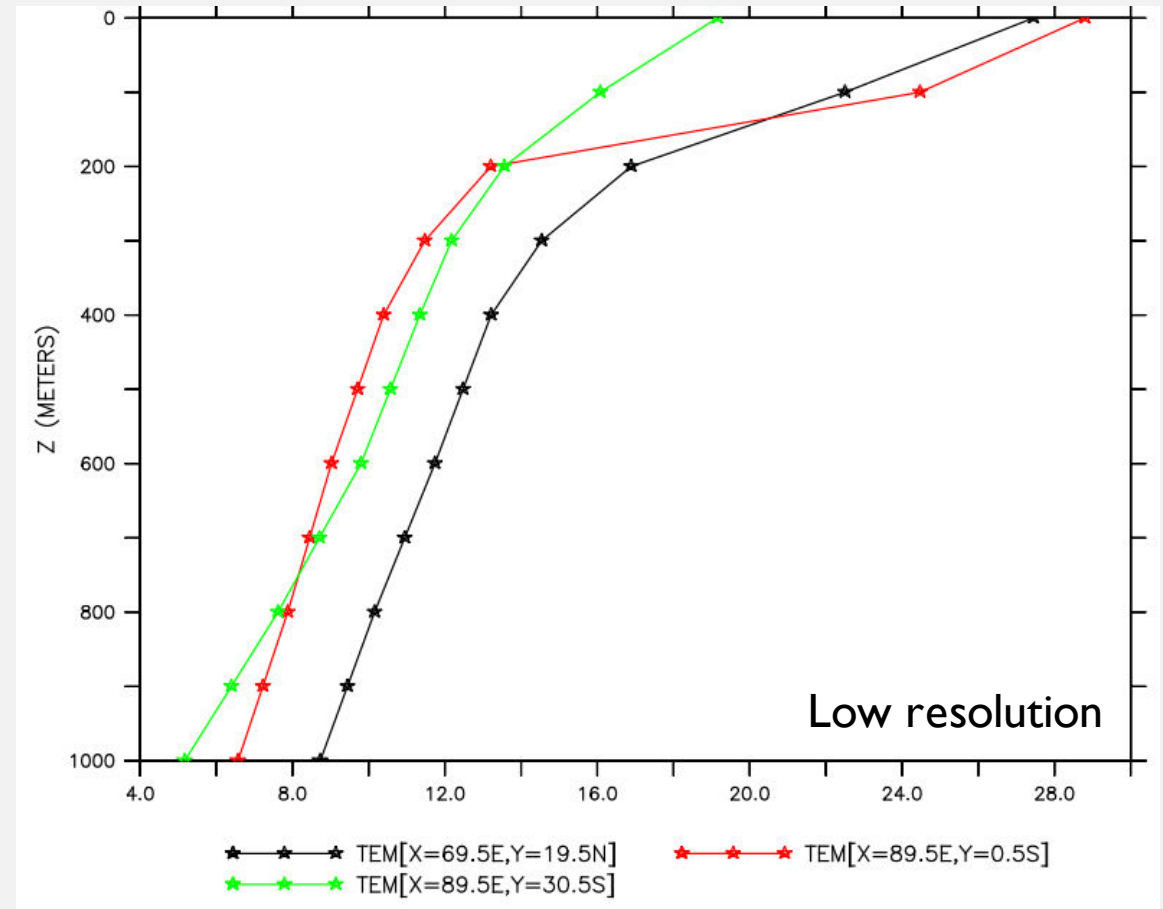
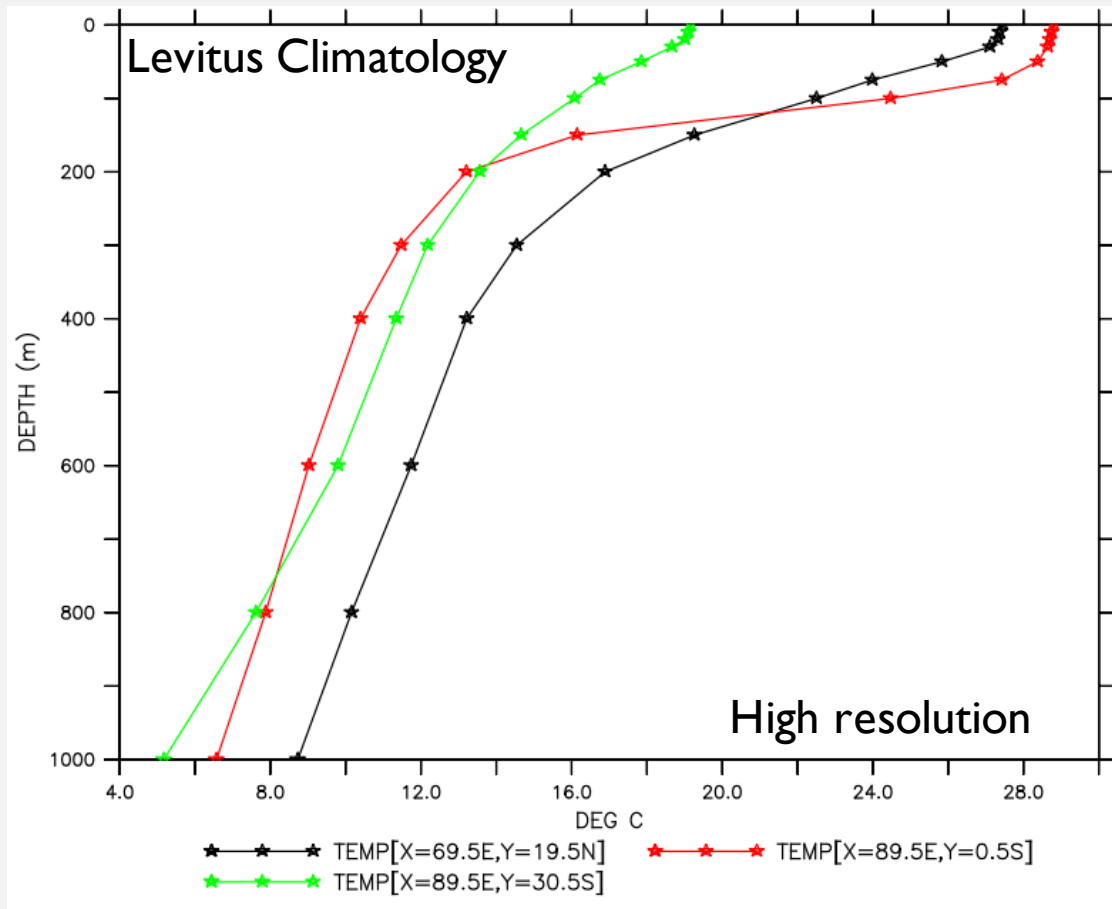


Relief Of the Surface of the Earth (meters)

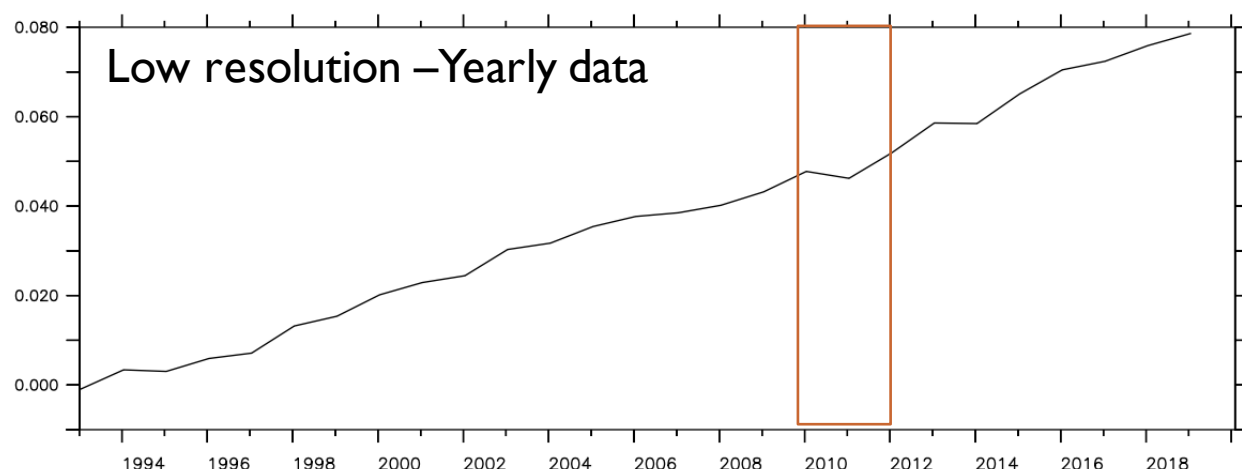
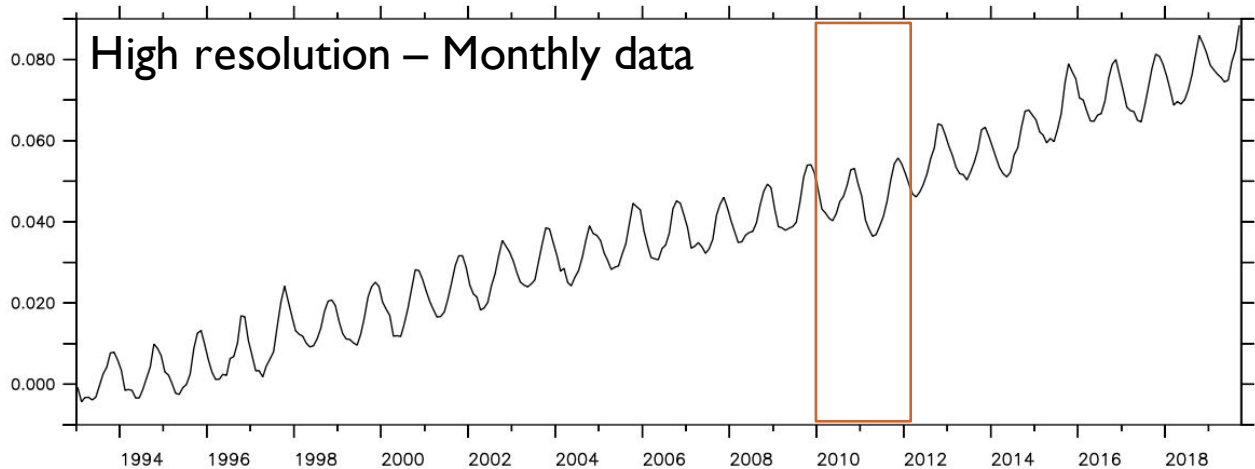


RELIEF OF THE SURFACE OF THE EARTH (METERS)

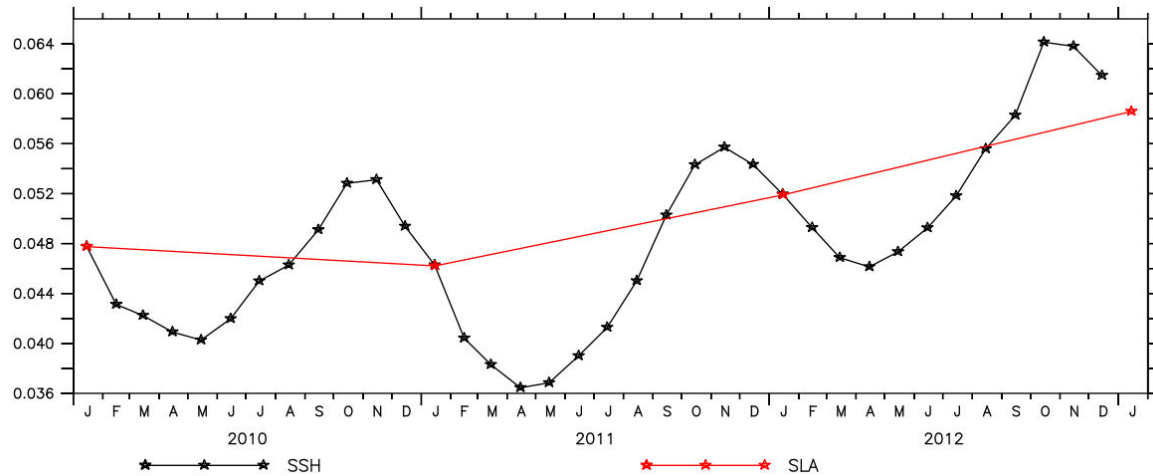
REGRIDDING DATA



REGRIDDING DATA



AVISO global average SSHA



ANALYSIS

- Average (variable[!=@**AVE**])
- Standard Deviation (variable[!=@**STD**])
- Monthly Climatology (variable[GT=month_reg@**MOD**])
- Anomaly (variable - variable[GT=month_reg@**MOD**])
- Regression (go **regresst** or regressx or regressy)
- Correlation (go **variance**)
- FFT (**ffta**(variance)
https://ferret.pmel.noaa.gov/static/Demos/ef_fft_demo/ef_fft_demo.html)
- Lowpass (**lsl_lowpass** (variable, cutoff_period, filter_span))

REFERENCES

- https://github.com/Rohithocean/Sea_Level_Data_Analysis
- https://ferret.pmel.noaa.gov/Ferret/documentation/users-guide/introduction/GO-FILES#_VPID_19
- <https://ferret.pmel.noaa.gov/Ferret/documentation/users-guide/appendix-a-external-functions/appendix-a>