

GROUP 6

Training course on

Emerging trends in Ocean Observations and Ocean Data Analysis

- Viola Rodrigues
- Muhammed Naseef
- Elizabeth Anju Issac
- Shanas Puthuveetil Razak

GROUP 6

Data sets

Sea level anomaly Equatorial Indian Ocean

- Daily data from [40 E to 110 E/ 3.5S to 3.5N, 14-OCT-1992 to 23-DEC-2015]

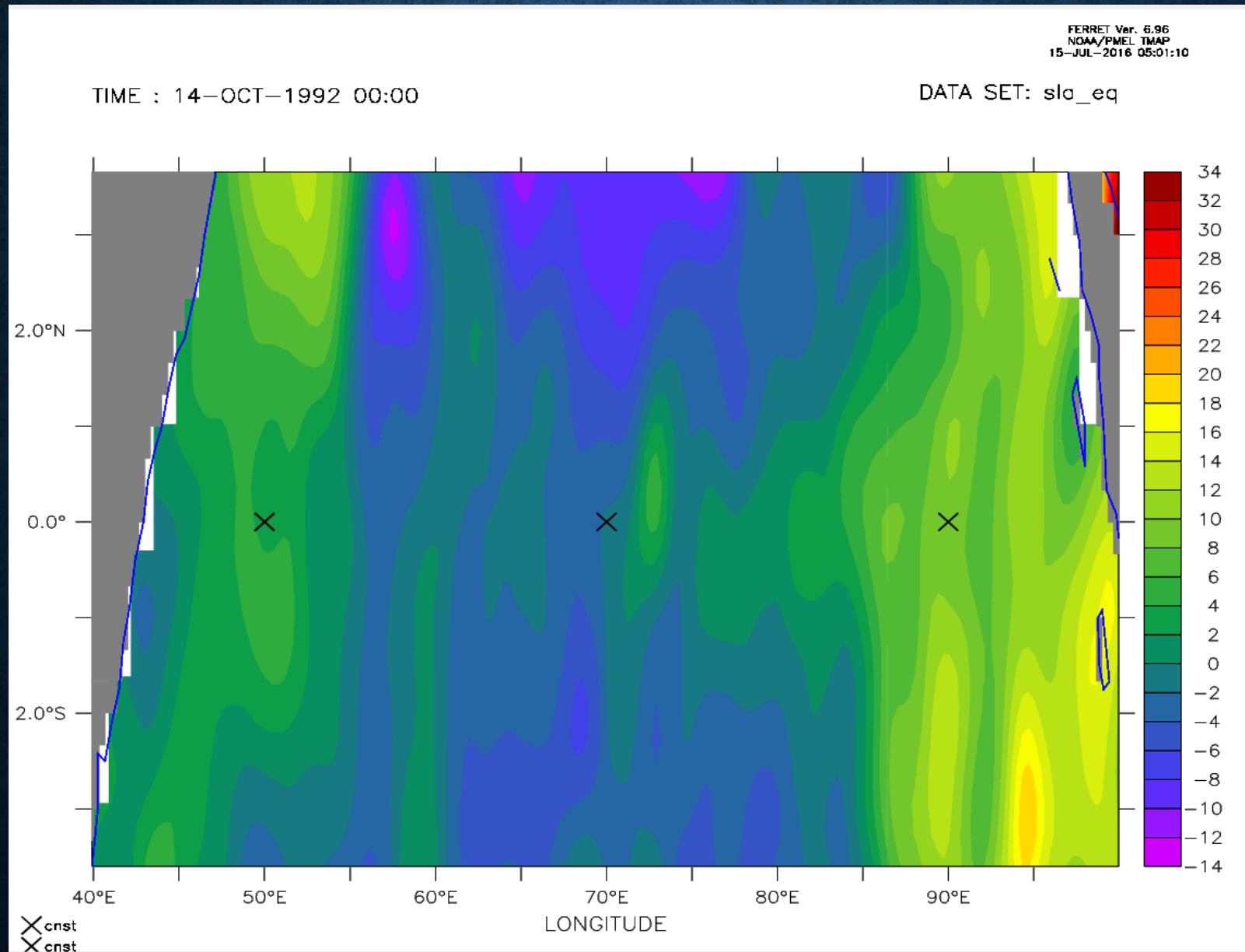
Current Data

- ADCP half hourly data-2 data files (12 -sep-2006 to 15-sep - 2007)
- 10 m , 30 m over 90E, 0N

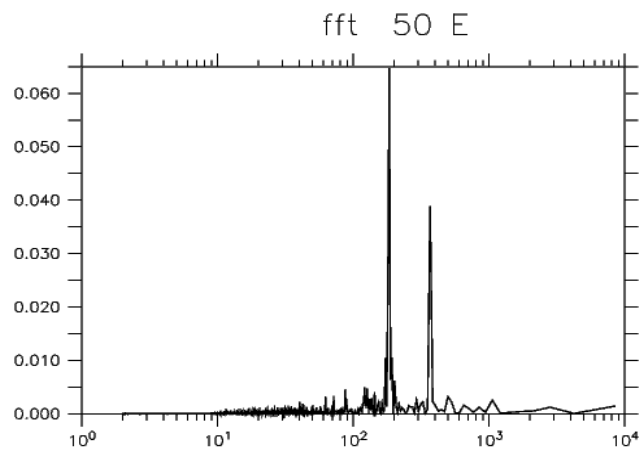
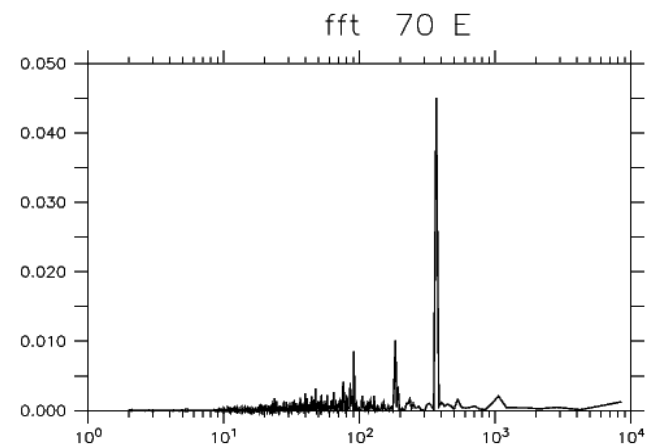
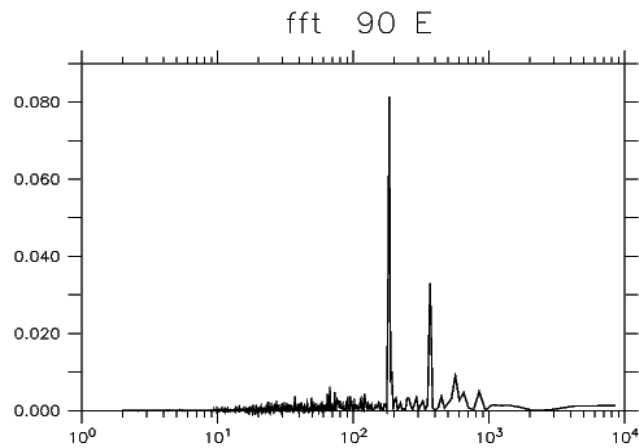
SLA DATA

- 3 points are selected for the analysis from SLA daily file.
 - a) 50E,0N
 - b) 70E,0N
 - c) 90E,0N for the entire time series.
- FFT Analysis has been carried out for these points

SELECTED LOCATIONS



FFT ANALYSIS –SEA LEVEL



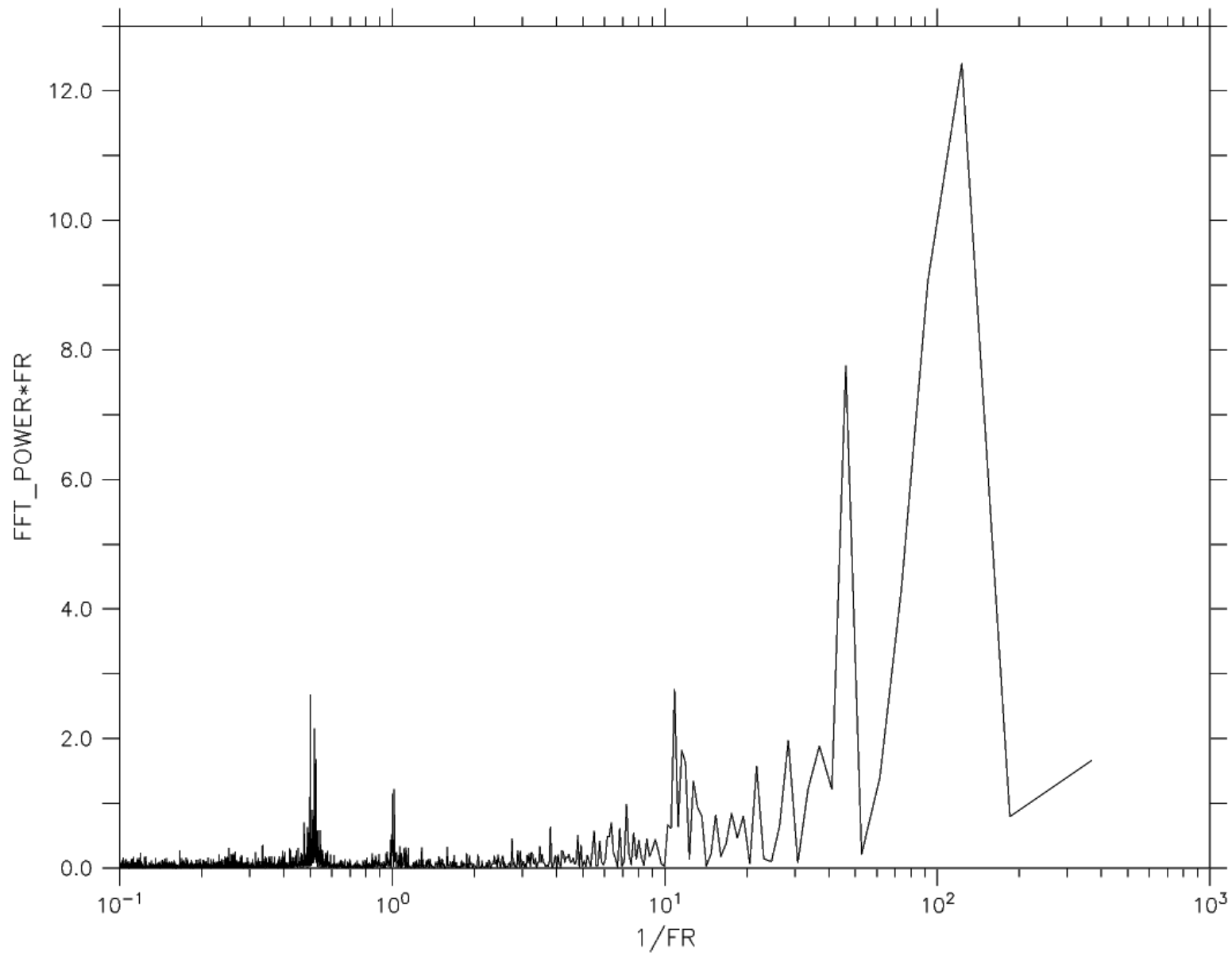
X Axis= $1/\text{Frequency}$
Y Axis= $(\text{FFT Power}) * \text{Freq}$

- Shifting of peak of the spectrum is observed at 70 E location
- The peaks for 90E and 50 E locations appear at similar time period .
- However the amplitude of the spectrum is higher for 90 E

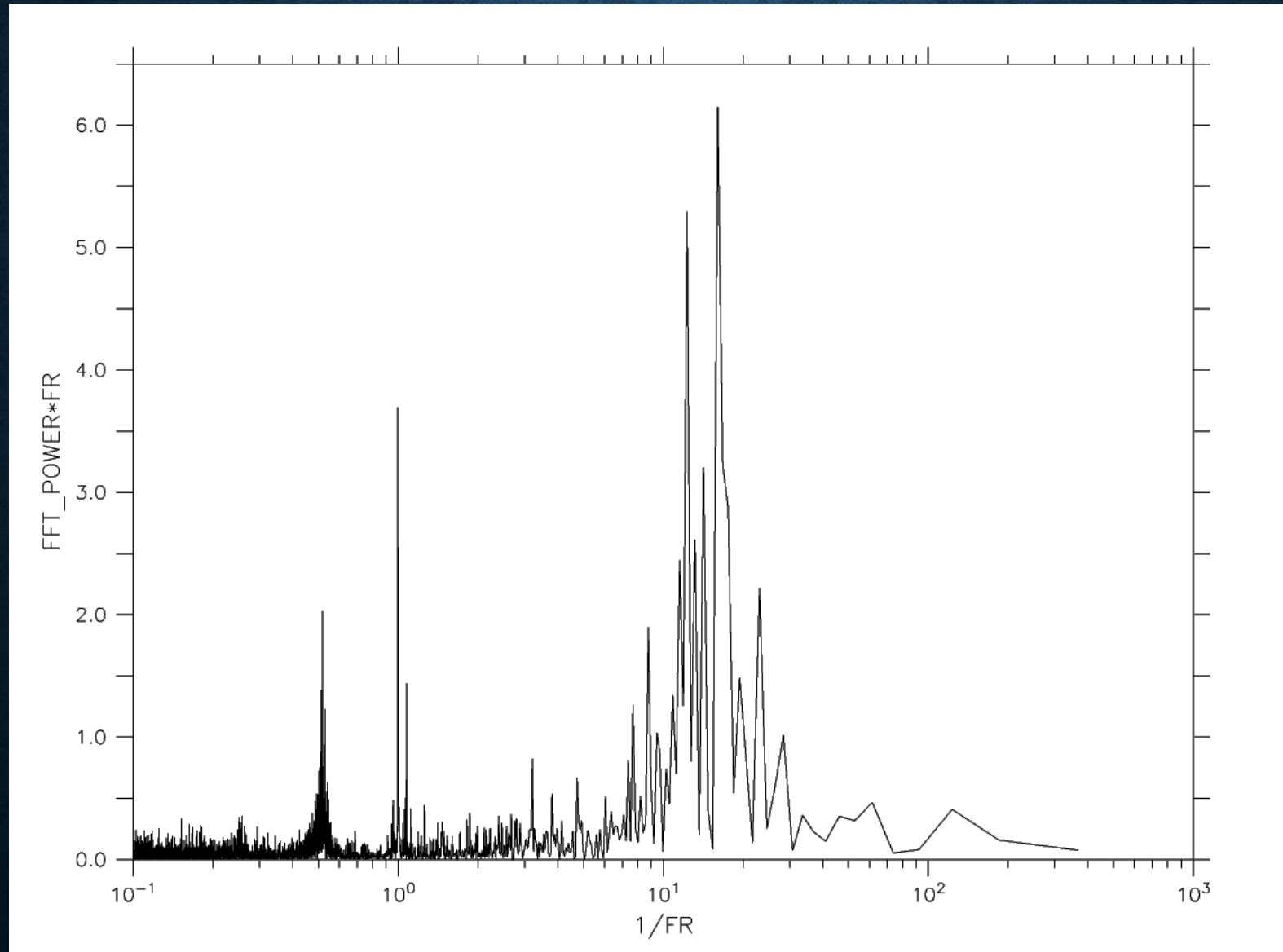
ADCP DATA

- Half hourly raw data converted to hourly data.
- FFTA Analysis carried out for both files.

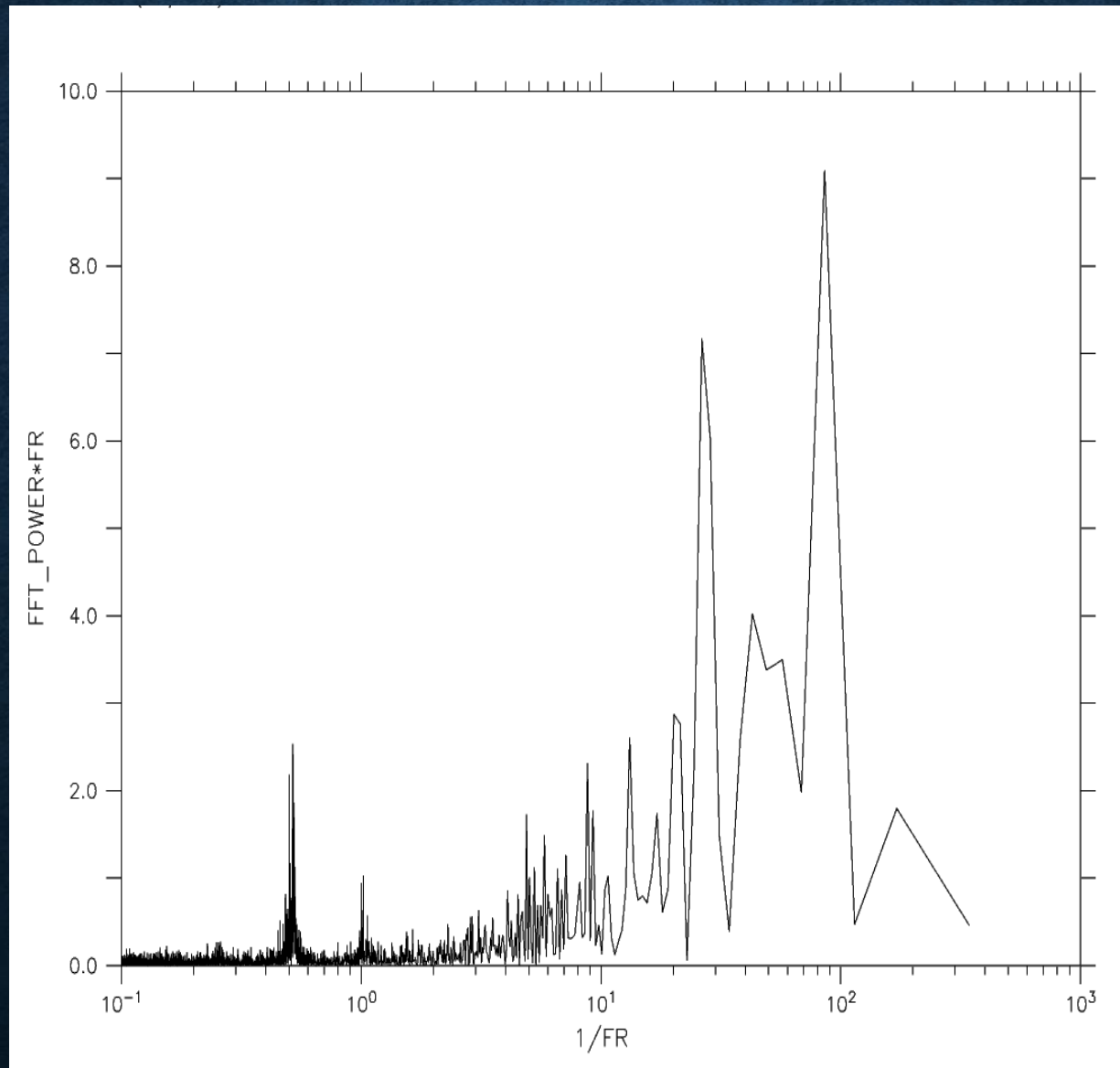
FFT ZONAL VELOCITY FOR 10M LEVEL



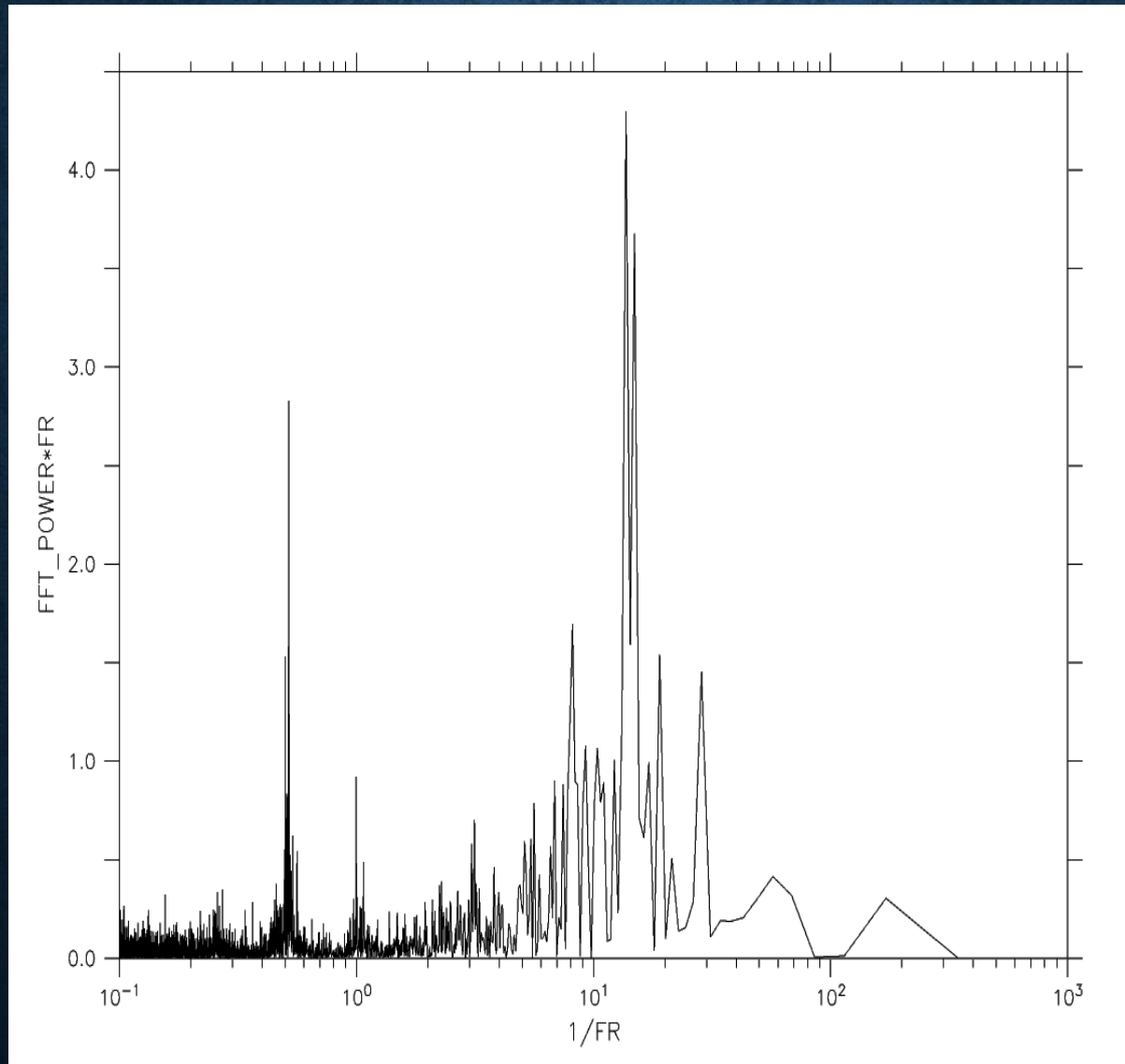
FFT MERIDIONAL VELOCITY FOR 10M LEVEL



FFT-ZONAL 30M VELOCITY

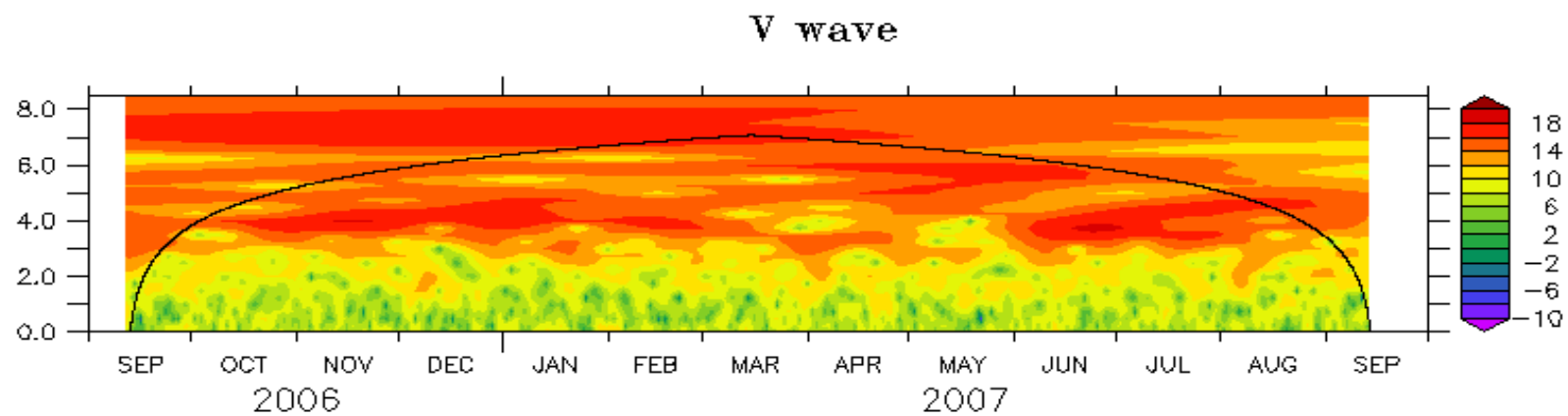
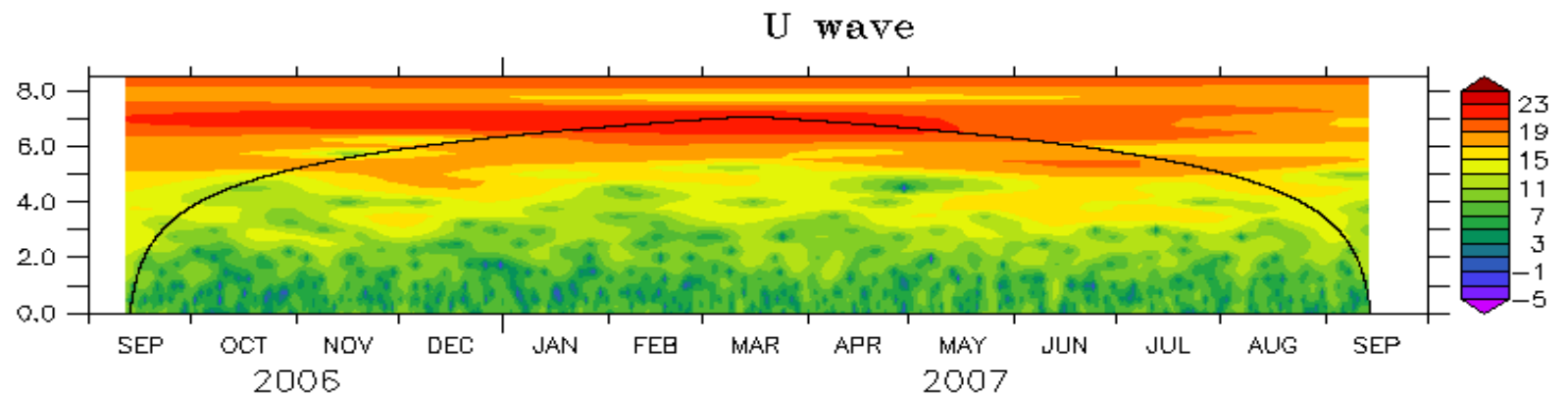


FFT-MERIDIONAL 30M VELOCITY

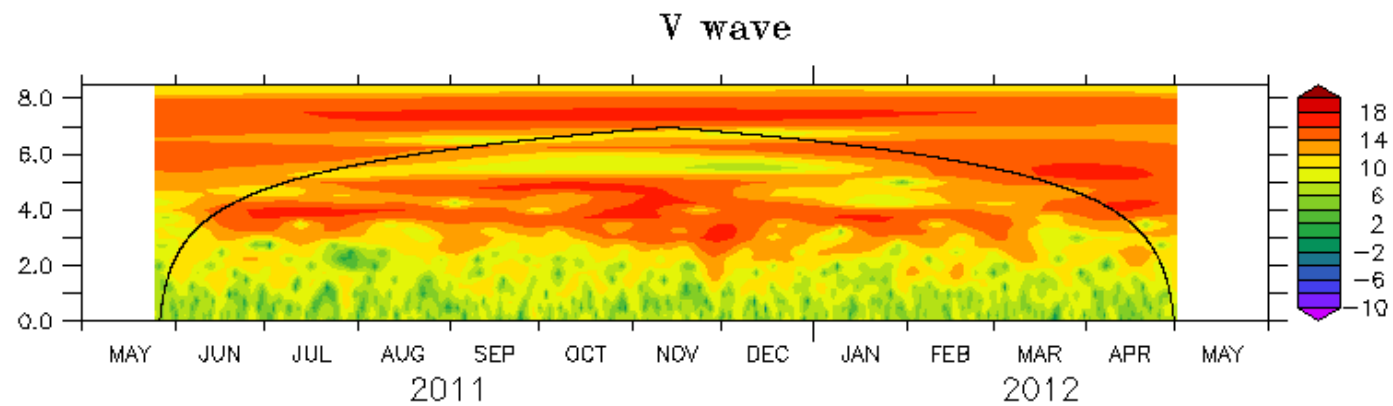
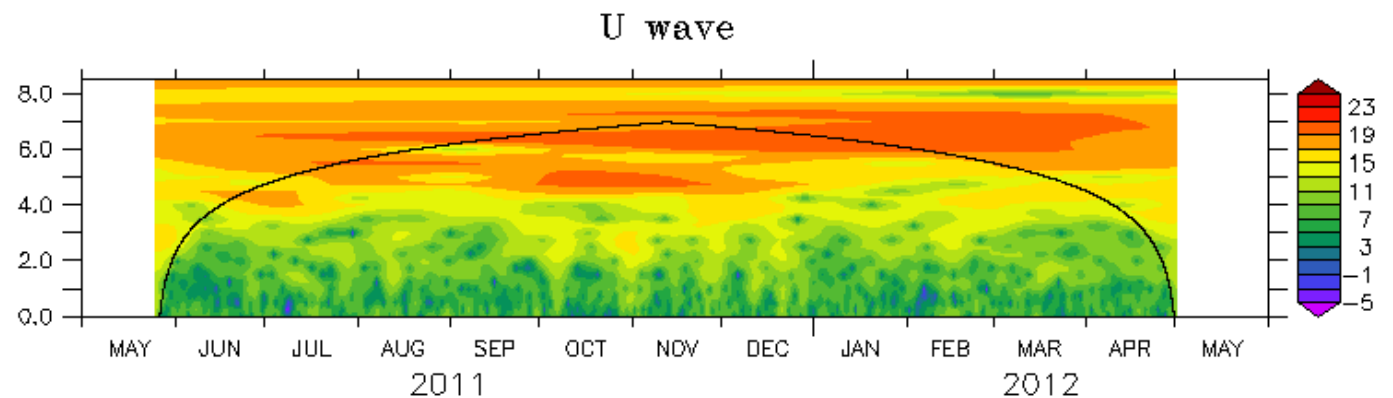


- For zonal component at both depths (10m and 30m) Intra seasonal signals are dominant and Signals with period less than 1 day are also present.
- For meridional component for both locations signals with period 10 days are dominating. Signal with 1 day period and less than one day are also observed.
- At 30m , the peak signal for less than one day is higher.

WAVELET-ADCP 10 M



WAVELET-ADCP 30 M

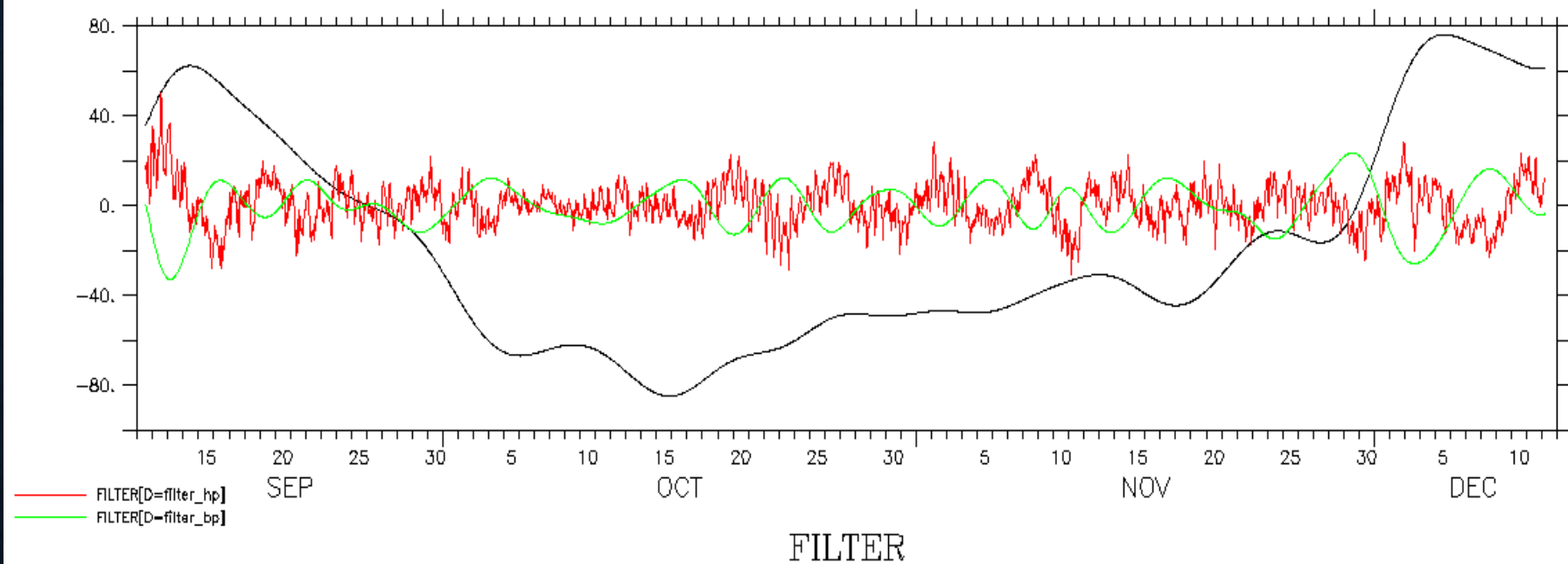


10M ZONAL BUTTERWORTH

LONGITUDE : 90E
Y (meter) : 0
Z : 10
YEAR : 2006

FERRET Ver. 8.96
NOAA/PMEL TWAP
16-JUL-2016 04:34:51

DATA SET: filter_lp

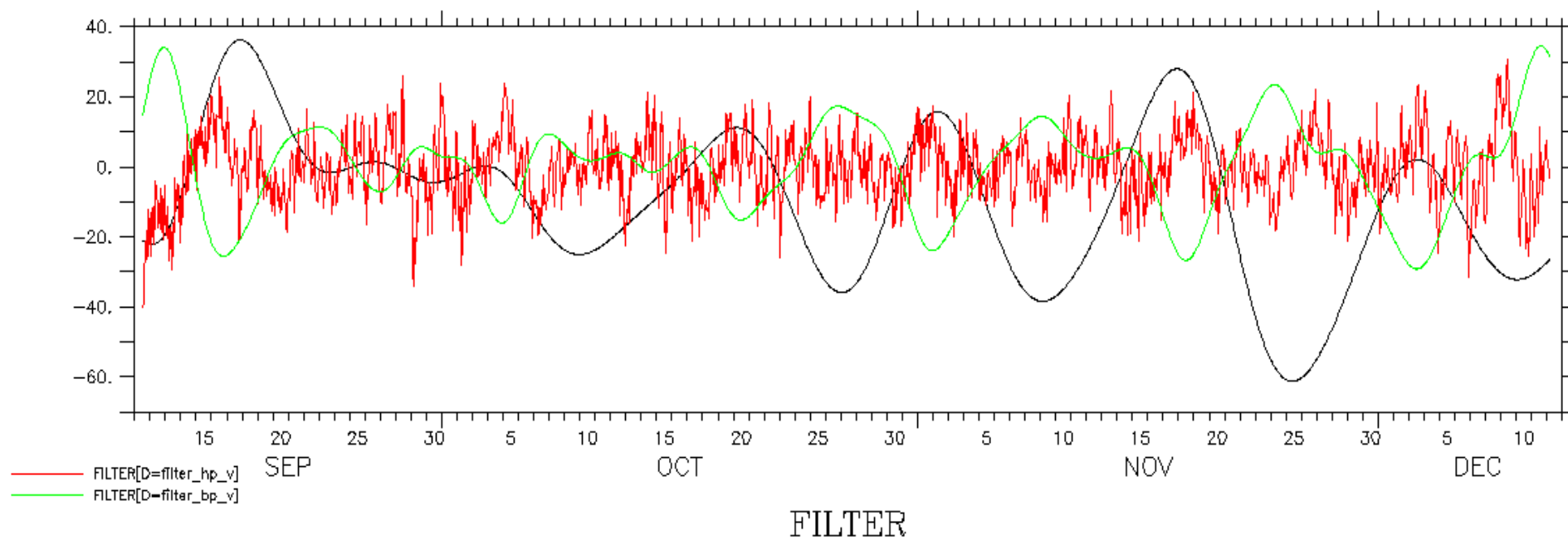


10M MERIDIONAL BUTTERWORTH

LONGITUDE : 90E
Y (meter) : 0
Z : 10
YEAR : 2006

FERRET Ver. 8.36
NOAA/PMEL THAP
16-JUL-2018 04:38:13

DATA SET: filter_lp_v

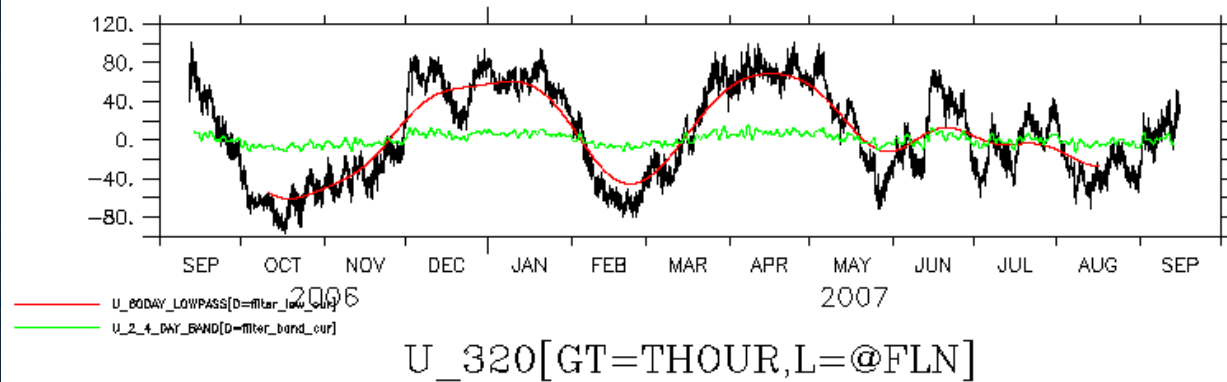


LANCZOS 10M

LONGITUDE : 90E
LATITUDE : 0
DEPTH (m) : 10

FERRET Ver.6.96
NOAA/PMEL TMAP
15-JUL-2016 03:50:19

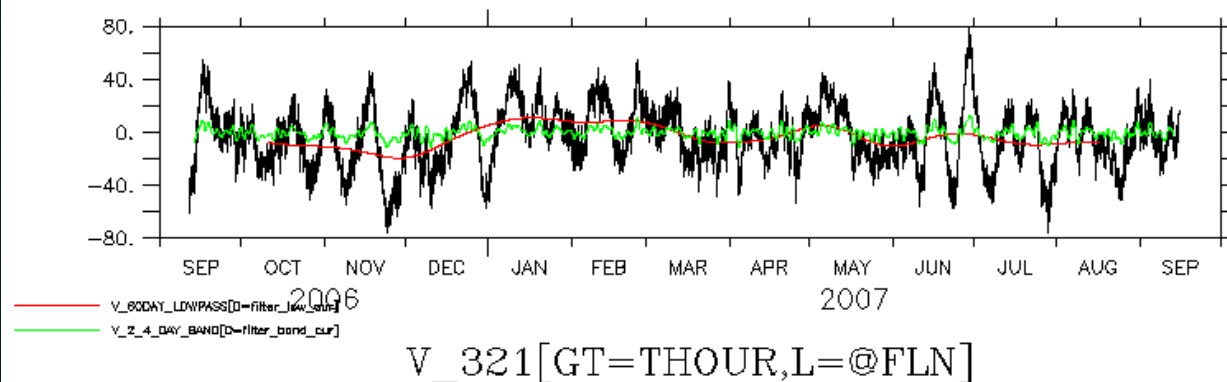
DATA SET: current_new_0n_90e_10m



LONGITUDE : 90E
LATITUDE : 0
DEPTH (m) : 10

FERRET Ver.6.96
NOAA/PMEL TMAP
15-JUL-2016 03:50:19

DATA SET: current_new_0n_90e_10m

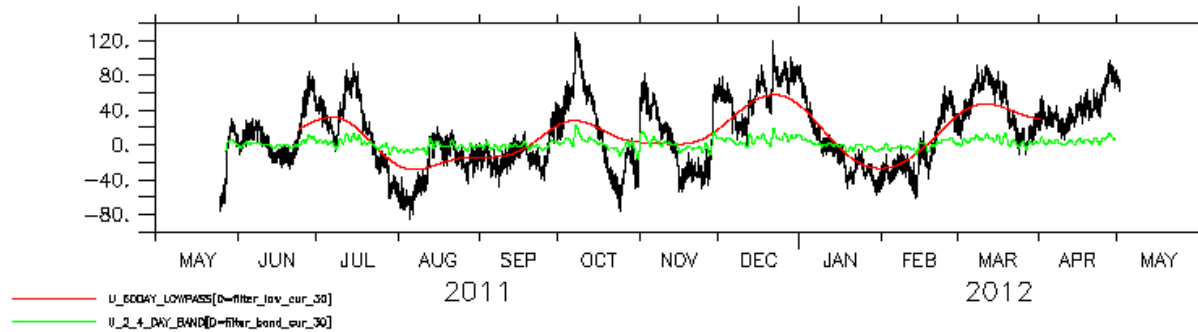


LANCZOS 30M

LONGITUDE : 90E
LATITUDE : 0
DEPTH (m) : 10

FERRET Ver.6.06
NOAA/PMEL TMAP
15-JUL-2016 04:00:29

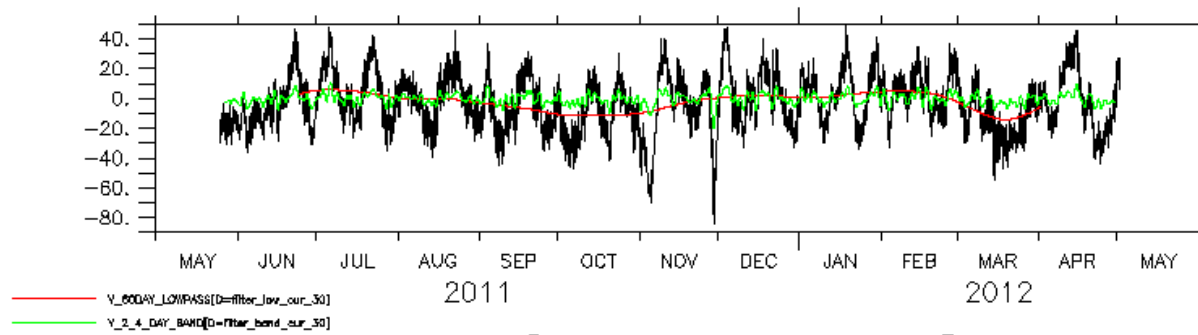
DATA SET: current_new_0n_90e_30m



LONGITUDE : 90E
LATITUDE : 0
DEPTH (m) : 10

FERRET Ver.6.06
NOAA/PMEL TMAP
15-JUL-2016 04:00:29

DATA SET: current_new_0n_90e_30m



Thank You