06-Sep-2019

Tides and its application in oceanography
Practical - PLAN A

Day 1:

Installation – ADCIRC
GMT
gfortran
MPICH
GCC

Checking for compatibility for ADCIRC and TASK-2000

Day 2: Tidal analysis and prediction

Group 1	Cochin	- RAD - 2012 & 2013
Group 2	Chennai	- RAD - 2011 & 2015
Group 3	Minicoy	- RAD - 2011 & 2014
Group 4	Port Blair	- RAD - 2015
Group 4	Mumbai/JNPT	- RAD - 2013 & 2014
Group 5	Visakhapatnam	- RAD - 2015 & 2017

Steps:

1. Plot the location map and evaluate the coastal geomorphology
2. Tidal analysis for 1 year (TASK-2000)
3. Plotting raw, predicted and residual time series (GMT/FERRET)
4. Plotting the tidal constituents using bar diagram (GMT/FERRET)
5. Analysis/calculation
    a. Identify the top five dominant tidal components
    b. Calculate: Mean sea level
    c. Calculate: Mean tidal level, mean high water level & mean low water level
    d. Identify the non-tidal variabilities in residual
6. Write a summary of the day 2 analysis with plots

Day 3: Tidal Analysis for storm case & QC

5/6 groups: Thane, Phailin, Hudhud, Vardha & Fani

Steps:

1. Quality control of tide gauge data
2. Plot the track of the cyclone along with intensity and overlay the tide gauge location (GMT)

3. Tidal analysis during the cyclone period (TASK-2000)
4. Plotting raw, predicted and residual time series (GMT/FERRET)
5. Identify the sea level variability during the cyclone (GMT/FERRET)
6. Compare the differences of sea level observed in tide gauges (GMT/FERRET)
7. Write a summary of the day 3 analysis with plots

Day 4: Regional tide and storm surge modelling using ADCIRC

5/6 groups: Thane, Phailin, Hudhud, Vardha & Fani

Steps:

1. Creating Grid, forcing, Initial and boundary files for ADCIRC
2. Plot the model grid and overlay the cyclone track (GMT).
3. Run ADCIRC for a cyclone case
    a. Predict tide
        i. Compare the observed and modeled tide (GMT/FERRET)
    b. Predict storm tide
        i. Compare the observed and modeled sea level (GMT/FERRET)
        ii. Sea level evolution at the coast during a cyclone (GMT/FERRET)
    c. Understanding the surge caused due to cyclone
    d. Importance of surge and tide at the coast during a cyclone
4. Write a summary of the day 4 analysis with plots

Day 5: Group presentation

5/6 groups: Thane, Phailin, Hudhud, Vardha & Fani

Steps:

1. Continuation of Day 4 analysis
2. Group presentation (PPT)