**Overview of 19 October, 2016 by Sea level variation group**

- The day started with Lecture of Dr. Amit Apte. His topic of lecture was "Lagrangian data assimilation". During his lecture he explained the basic concepts of data assimilation, problem estimator and the main ingredients. He also talked about Lorenz equation. Through his lecture, we also came to know about uncertainty (probability density, conditional probability, Gaussian probability), observational error, accuracy and precision etc.

- The next lecture was given by Dr. Pattabhi Ramarao of INCOIS. He talked about "Real-time ocean observation and ocean data and ocean information system". He gave the information about the instruments, available data for real time ocean observation. He also highlighted about omni buoys, tsunami buoys and met ocean buoys and buoys network in Indian Ocean. He explained the role of INCOIS in ocean data management.

- After tea break we started our practical section. Our mentors (Dr. Unnikrishnan and Dr. Jan Even) first gave us an introduction about the exercises to be done. Then we started our exercise on analyzing the sea level variation. We tried to calculate the contributions to project sea level and analyze trends from time series of tide gauge. We worked up to 5pm.

- We participated the last lecture on "Upwelling along the coast of Kerala and penetration into the Bay of Bengal" by Dr. Joseph. He gave explanation about monsoon wind, surface circulation, signature of upwelling, remote sensing techniques. He showed analysis of different parameters for understanding upwelling along Kerala coast. He also talked about Ekman transport, HYCOM model etc. According to their result as they monitored, during summer monsoon there is penetration of upwelled water into the Bay of Bengal.

- We ended our day with practical exercise and formulating questions about two days lectures within our group.

Group members: Bernardino, Marufa, Anya, Dhanalakshmi, Ballari, Prerna & Srinivas.