



## Session 3: Ecosystem responses to physical drivers in coastal regions (joint session with MEAP-TT)

- Land/sea interface and estuarine modelling is a common problem for MEAP and COSS-TT.
- Lack of availability of hydrology/water quality model information and the ability to constrain the quality.
- Linking with observational groups; there is a real gap in some areas  
- The use of ARGO BGC Data
- Remote sensing -- making sure we have a common understanding.
- The BGC Models are imperfect , BGC models are with different complexity
- The need of a high resolution, well validated coastal physical model to be coupled with the BGC



- Seamless vs downscaling approach: connect structured and unstructured grids:

Upscaling / downscaling - exchange information between global/regional/coastal.

A lack of good quality global BGC boundaries, and on top of that the mathematics of the boundary conditions are more problematic than for physics.

- Data Assimilation:

Do we need a fully coupled Data Assimilation or NOT? In principle BGC simulations should feedback on physics and vice versa

Weakly coupled - assimilate physics and let biogeochemistry change through dynamics

Strongly coupled assimilate both physics and biogeochemistry

- Assimilation only Chlorophyll is not sufficient



- Processes sub-mesoscale and mesoscale are key to MEAP and COSS-TT – resolution, domain
- Upwelling/Downwelling processes and BGC
- Parameter estimation from ensembles
- Coupling with the atmosphere – the meteorological forcing if coupled to BGC will help and provide feedback
- Archiving and interoperability, physical velocities, timescales of archiving – open boundary data information is not enough