

Class notes, SMS-618, Particle Dynamics.

Class # 1: Logistics and overview of particles in aquatic environments.

Questions for us to solve as a group (spend 5minutes on each of them individually, and we will then discuss them in a group):

- What is a particle?
- What particles do we find in aquatic environments?
- What are the sources/sinks of particles in aquatic environments?
- What are the processes that affect their transport and transformation?
- What properties of these particles do/should we care about?

Suppose for a moment that NASA asked you to design a sensor to send to Europa (Jupiter's satellite) and probe the vast water reservoirs found under ice on its surface (see: [http://nssdc.gsfc.nasa.gov/planetary/ice/ice\\_europa.html](http://nssdc.gsfc.nasa.gov/planetary/ice/ice_europa.html)).

Questions for us to solve as a group (spend 5 minutes on each of them individually, and we will then discuss them in a group):

- What properties would you want to sense?
- What sensors would you use to sense those properties?

Please answer the following questions (after reviewing the tentative syllabus):

- Why have you signed up for this class?
  
  
  
  
  
  
  
  
  
  
- What do you hope to learn from it?
  
  
  
  
  
  
  
  
  
  
- Which topics would you like to see us spend most time on?
  
  
  
  
  
  
  
  
  
  
- How much emphasis would you want to see applied to:
  1. Methods to sense particles and their (including labs with instruments) .
  2. Quantitative modeling of particle dynamics:
    1. Coastal and estuarine sediment transport.
    2. Particles and their dynamics in the open ocean (e.g. the biological pump).
  3. Overview of phenomena where particles are observed to play a role.
  4. Class discussions of pertinent material vs. frontal presentation?