

## **PHO-2 Physical Oceanography - Oceanic processes**

**Pascale Bouruet-Aubertot & Francis Codron**

3 ECTS

This course is shared with other OACOS specialities

Chapter IV- Physics of the surface mixed layer and coupling with sea ice

Equation of state. Surface fluxes. Stratification & stability. Sources of mixing.

Summary of sea-ice physics and observed cycle: formation, transport, melting from above / below.

Evolution of the mixed layer & seasonal cycle. Links with water mass formation.

Chapter V- Meridional overturning circulation

energetic point of view, diabatic and adiabatic forcings, abyssal circulation, deep convection

Chapter VI- Ocean atmosphere interactions and variability

- Atmosphere -> Ocean : the ocean as a passive integrator of atmospheric fluxes

- Ocean -> Atmosphere : influence of SST on the atmospheric boundary layer

- Ocean- Atmosphere interaction : ENSO, (basin modes)

- large-scale coupling (meridional): Hadley cells,/ tropical cells, energy transport, Bjerkness compensation.

**Pascale Bouruet-Aubertot & Francis Codron** are Professor at the University Pierre et Marie Curie, Paris, researcher at LOCEAN. Research Interest: Oceanic dynamics at sub-meso scales and turbulence; development of laboratory experiments for geophysical fluid dynamics.

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