

PHYSICAL OCEANOGRAPHY

- Short introduction to physical oceanography: The main questions and goals.
- The conservation laws in physical oceanography and the dynamical frame of the oceanic system.
- The theory of oceanic wind-driven gyres and the western boundary intensification.
- The theory of buoyancy-driven and abyssal circulation of the ocean.
- Wave solutions and instabilities in the ocean: Barotropic and baroclinic waves in the ocean and the adjustment of the ocean circulation.
- Equatorial dynamics and the El Nino system.
- Ocean dynamics in the polar regions and their role in climate variability