

Postdoctoral Position in Coastal and Open-ocean Plankton Ecosystem and Dynamical Modeling

The European Institute of Marine Studies (IUEM, University of Brest, France) invites applications for a 20 months postdoctoral research position to investigate the effects of cross-shore exchanges induced by submesoscale dynamics from part to part of continental slopes. This position will contribute to a project funded by the French National Research Agency (ANR) aiming to advance our understanding in the submesoscale dynamics and biology on steep slopes (SYNBIOS <http://www-iuem.univ-brest.fr/synbios>).

Numerous recent studies demonstrate that sub-mesoscale motions, driven by strongly nonlinear dynamics, can have profound effects on the local structure and dynamics of the planktonic ecosystem. This is particularly true in coastal systems in which the cross-shore gradients of environmental properties and ecological variables are very sharp, especially from part to part of the continental slope. The role of the cross-shore transport at these scales on the plankton ecosystem structure and functioning is far from being fully understood because of the highly nonlinear biotic and abiotic interactions. We propose a numerical process study approach, based on idealized biological and dynamical models, to reach a rationalization of key processes involved.

The postdoctoral researcher will use complementary approaches. Theory of dynamical systems to investigate the coupling between coastal and offshore ecosystems using simple plankton ecosystem models. Numerical approach with idealized configuration of a dynamical model at high spatial resolution (ROMS) to study the interactions between coastal and open ocean plankton communities at submesoscale. This study will be a numerical and theoretical process study that will address and test several specific scientific hypotheses. Previous modeling experiences in ocean circulation, biogeochemistry, and ecosystem are desirable.

Please forward applications or requests for further information to Pascal Rivière (Pascal.Riviere@univ-brest.fr). Applications should include a cover letter stating interest in the position, a complete curriculum vitae describing research experience, and the names, addresses, email, and telephone numbers of three references.

The postdoc position will interact with the members of the project between LEMAR and LPO which are two dynamic scientific departments of the IUEM with diverse research activities focused on ocean biology and physics.