

My studies in decapod larvae: Past and ongoing projects. (研究紹介)

The crustacean decapod group is reasonably well known, with 285 species reported in the Canary Islands. Understanding biological and physical mechanisms involved with larval transport is a keystone in the fields of ecology, conservation and fishery management. This study represents an attempt to elucidate the transport pathways of decapod larvae within the Canary-African Coastal Transition Zone, C-ACTZ, where larval assemblages are poorly known. I'll present the result obtained during the cruise FAX99. During the cruise, two independent filaments developed between Cape Juby and Cape Bojador to merge 100 km offshore. The merged filament was entrained around a recurrent, topographically trapped cyclonic eddy and interacted with transient cyclonic and anticyclonic eddies shed from the island of Gran Canaria. Our results illustrate a close relationship between these mesoscale oceanographic structures and the distribution of decapod larvae using both field observations and transport modelling. Analysis of plankton samples showed that the C-ACTZ is an area where both Canary and African larvae may be present at the same time. In this sense, eddies were dominated by larvae of pelagic species whereas the upwelling filaments were dispersive, transporting African larvae of benthic species seaward and towards the Canary Islands archipelago. On the other hand, predictions of larval transport are obtained from the Ichthyop Lagrangian transport model, which is forced by a high-resolution hydrodynamic model (ROMS) that reproduces the regional circulation. The simulations support the field observations and the key findings are. Our observations of larval transport introduce new insights for the general understanding of the metapopulation connectivity between the Canary Islands and the African coast.

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