

Modelling of PCB trophic transfer in the Gulf of Lion ; Mars3D/ECO3M coupled model application.

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This work aims at assessing the role of plankton in the transfer of PCBs to higher trophic levels in the Gulf of Lions by coupling biogeochemical and hydrodynamical processes and taking into account the physico-chemical properties of PCBs (PCB153 and PCB28). Specifically, the MARS3D hydrodynamical model taking into account the PCB transport was coupled with a biogeochemical model Eco3M-MED. Transport of various PCB species were simulated during one year: total dissolved, freely dissolved, particulate, biosorbed on plankton, assimilated by zooplankton. PCB budgets and fluxes into the Gulf of Lions between various species were governed by different processes, such as: adsorption/desorption, bacteria and plankton mortality, zooplankton excretion, grazing, mineralization, volatilization and biodegradation. This study is part of COSTAS project (Contaminants dans le système trophique: phytoplancton, zooplancton, anchois, sardine) supported by ANR-CES-007.