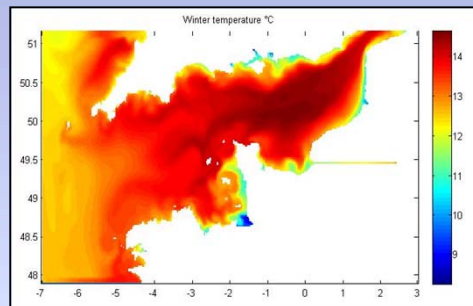




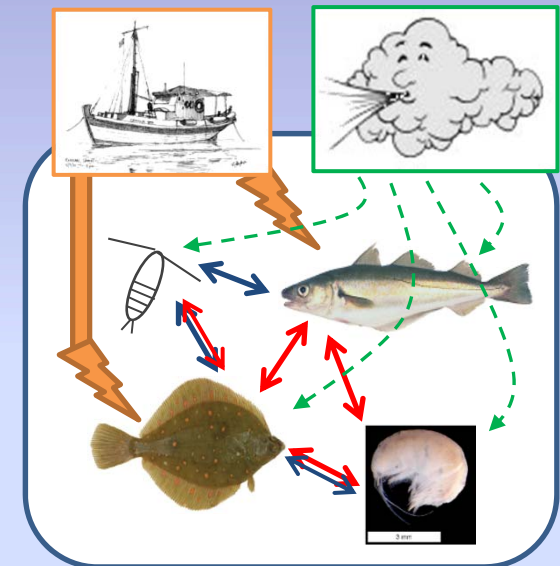
# An end-to-end model coupling physics, plankton and fish dynamics for tracking emergent trophic interactions in the English Channel

Morgane Travers-Trolet

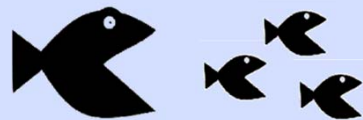
Global warming and overfishing have been proved to impact marine food webs. In order to understand them and potentially predict their impacts, ecosystem model must consider the whole food web and the multiple forcing factors affecting them.



Here we applied an **end-to-end model** to the eastern English Channel, by coupling a biophysical model of plankton (MARS3D) with a fish IBM model (OSMOSE).



The innovation of this study is the double coupling implemented: the **coupling of low and high trophic levels** and the **coupling between benthic and pelagic areas**.



Furthermore, because predation is represented as an opportunistic size-based process, trophic interactions can change, allowing the **emergent food web structure to change according to forcing factors** (fishing, climate, habitat perturbations...). Such scenarios will be run to quantify the relative impact of these perturbations on the eastern English Channel ecosystem.



Laboratoire Ressources Halieutiques  
Centre Manche-Mer du Nord

