The aim of this PhD project is to better understand allocation and fate of matter/elements fluxes in organisms. Final aim is to use the model on natural field with an inverse method approach. The result will be used to i) reconstruct originally trophic conditions of observed isotope signatures and ii) to determine biological indicators for Crossostrea gigas culture in France when quantifying and explaining the variability of growth performances of oysters among culture sites at a large temporal scale by coupling isotopes and DEB modeling.