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Zooplankton as link or key in marine ecosystem models

Zooplankton is often thought of as a link in marine ecosystems, the important but maybe not so interesting factor bringing matter and energy from the physics and productive organisms to the more interesting and edible fish species. In models, zooplankton are typically represented in a few state-variables, such as 'large' and 'small', governed by simple equations. But zooplankton are interesting and sophisticated organisms with flexible and adaptive behaviours and they are structuring the marine ecosystem, both as prey and predators. Here, I will try to stimulate discussions of how we model zooplankton and their place in marine ecosystem models. Simple models may be predictive if the forcing is strong, while complex ecosystem models can sometimes (often?) be more interesting as scientific tools than predictive management tools. What is the important forcing variables to include in zooplankton dynamics? Can trait-based approaches improve our thinking and representation of zooplankton in ocean ecosystem models?

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