



Challenges in marine biogeochemical model development

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In the history of marine biogeochemical modelling we have seen a trend towards more and more complex empirical models from early nutrient-restoring models to current multi-functional-group type models. Still, data assimilation and model validation studies have not yet demonstrated unambiguous performance enhancement. New strategies are needed to guide model development along safe pathways between unnecessary detail and unjustified simplification. Promising attempts will be presented that include mechanistic albeit hypothetical model concepts, the development of which requires close collaboration between modellers and experimental biologists.