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Discussions

Interactive comment on "Implementing a finite-volume coupled physical-biogeochemical model to the coastal East China Sea" *by* Jingui Liu et al.

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The authors presented their work on coupling a hydrodynamic model (FVCOM) and an ecosystem model (ERSEM), and the first results from model application to the coastal East China Sea.

Such kind of effort is doubtlessly important for understanding and quantifying biogeochemical processes in coastal shelf seas. However, the drawback of this study is obvious. It reads like an immature technical report rather than a scientific paper. It lacks a specific scientific topic to address, and I don't see any innovations in the presented results.

Further, the model setup for the study area is too simple to account for the complex

physical and biogeochemical processes that act in the East China Sea. The oversimplified treatment of the open boundary, which considers astronomical tides only, makes the model incapable of including the impact of the Kuroshio current that is so dominant over the outer and mid-shelf and even parts of shallow coastal area that is subject to intrusion of the Kuroshio current where a remakable front is formed (see e.g. Hsueh, 2000. The Kuroshio in the East China Sea. JMS 24, 131-139). Without an inclusion of the Kuroshio current, any numerical model for the East China Sea is deficient in accounting for the complexity of hydrodynamics, not to mention biogeochemical parameters that are highly depending on the interaction between the Kuroshio currents, coastal currents and river runoffs. The big gaps between measured data and model results shown in Fig. 6-10 clearly demonstrate the model deficiency.

Given that the drawback of the study (i.e. lack of a specific scientific question) and the model setup (i.e. exclusion of the Kuroshio currents) is so remarkable, I recommend to reject the manuscript in its current form.

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