

***Interactive comment on “Seasonal dynamics of  
*Pseudocalanus minutus elongatus* and *Acartia*  
*spp.* in the southern Baltic Sea (Gdańsk Deep) –  
numerical simulations” by  
L. Dzierzbicka-Głowacka et al.***

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General comments The paper by Dzierzbicka - Glowacka et al. addresses the position and role played by the most abundant copepods, such as *Pseudocalanus elongatus* and *Acartia spp* in ecosystem of southern part of the Baltic Sea (Gulf of Gdansk). A population dynamics model for copepods was coupled with an one-dimensional physical and biological upper layer model for nutrients, phytoplankton, microzooplankton and an early juvenile herring as predator. The copepod model links trophic processes and population dynamics, and simulates an individual growth within cohorts and the

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changes in biomass between cohorts. Authors by simulations of annual cycles of copepods described one complete generation of *Pseudocalanus* and two generations of *Acartia* in the water column of Gdansk Deep. Authors presented by their model how the population dynamics of the most abundant copepods interact with the environment. The paper address relevant scientific questions, presents novel concept, ideas and advance methods. The title clearly reflect the contents of the paper, and the overall presentation is well structured. The abstract provide a concise and complete summary. The number and quality of references are appropriate. The results presented by the authors are both interesting and valuable as they contribute significantly to our knowledge on the mechanisms of functioning the shallow water ecosystem. In my opinion Authors give proper credit to related work and clearly indicate their own original contribution. This paper certainly should be published after some minor corrections have been made.

Referee comments; Abstract - provide a concise and complete summary, but in my opinion should be make a note why fitoplankton bloom is very important in diet of adults females of copepods , and why it does not important for the youngest part of new generation (nauplii - do not feed, at all) Intoduction Page 1161/15 - Phytoplankton in water either grazed by zooplankton, small fish or else dies and sink . - to add: small fish Adaptation of the submodel to investigated copepod - page 1160/ 15: “ $\check{E}$ . lower threshold of 10 mgCm<sup>3</sup> for nauplii  $\check{E}$ .” - this sentence should be without nauplii because they do not feed, at all! Results - fig. 5 -is not very clear - to small size Page 1172/ 20 - why mortality is one of the factor increasing biomass of mass copepods? Page 1174/15 - why mortality is one of the factor decreasing biomass of *Pseudocalanus* Conclusion - Page 1181/20 -  $\check{E}$ . instead “ My model  $\check{E}$ .” should be “Our model $\check{E}$ ”

Specific comments - technical corrections: ex. Page 1160/20- str ukture - structure Page 1161/5 - possble- possible

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