

## ***Interactive comment on “Modelling the population dynamics of *Temora longicornis* in the Basin Gdańsk (southern Baltic Sea)” by L. Dzierzbicka-Glowacka et al.***

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The main objective of this study is to determine the population dynamics of the *T. longicornis* in the southern Baltic Sea based on the numerical analysis. Much similar studies have already been published for *Pseudocalanus* sp. and *Acartia* spp. from the Baltic Sea by the same authors. So evaluation of this study, as well their previous ones, depends on the feasibility of the numerical model.

Of the three parts of the study, i.e. (1) determination of the functional relationships between physiological processes and environmental parameters, (2) determination of the population model for *T. longicornis* connected with the ecosystem model 3-D CEMBS,

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and (3) empirical verification of the population model based on in-situ data. I concern mainly with the above (2) and (3), and have several comments and question as below.

1) In the section of Baltic ecosystem model 3-D CEMBS, for example, Fig. 1 presents the results from the model for hydrodynamic and biogeochemical variables on 2 May 2012. I wonder how the population model for *T. longicornis* is connected with 3-D CEMBS, because 3-S CEMBS incorporate one of the variables such as zooplankton. I feel difficult to understand how the above zooplankton in 3-D CEMBS is equivalent to *T. longicornis* in the population model, or whether the above zooplankton was replaced with *T. longicornis* in the population model.

2) For the sections dealing with empirical verification of the population model, I do not agree to author's discussion. Particularly the verification based on in-situ data at each station (P1 and P2) is of much problem, needing to confirm their representatives or average values of the field situation and I do not agree to without such confirming. On the contrary, I ask the authors to make clear the proposal or field-sampling design in future in order to verify their model using in-situ data. And further I like to ask the comparison of seasonal dynamics of *Pseudocalanus* and *Acartia* spp. in their previous studies and *Temora* in this study based on their numerical analysis, so that the authors are able to evaluate the validity of the model by judging whether seasonal and spatial variations in the rank-in-dominance of each of the above species is simulated in the Baltic Sea.

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