**Ocean Science
Discussions**

Interactive comment on "Pre-operational short-term forecasts for the Mediterranean Sea biogeochemistry" *by* P. Lazzari et al.

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We thank the Anonymous Referee for its useful suggestions and comments. We here present how we intend to proceed in order to review the manuscript, following what explained by Ref.#2.

1. In biogeochemical models (such as BFM) higher trophic levels involved in the secondary production are resolved as a model closure, thus specific zooplankton life cycle is only roughly parameterized: this level of complexity is necessary to correctly evaluate the secondary production. Even if some examples of coupling between zooplankton life cycle and NPD models have been carried out (Calanus finmarchicus, Carlotti and Radach, 1996) the same approach for the Mediterranean is complex because no dominant zooplankton key species are present (like in the case of Calanus finmarchicus for

North Sea).

2. The choice of BFM as biogeochemical reactor was oriented by the fact that many complex processes/features present in this model are known to be relevant for the Mediterranean Sea: âĂć microbial loop (Thingstad and Rassoulzadegan, 1995); âĂć multi-nutrient description of biogeochemical cycles (Ribera d'Alcalà et al., 2003); âĂć presence of different phytoplankton functional types with no clear permanent prevalence of key species. In order to include all these issues in our operational forecasting system we chose to adopt BFM as a well-known, state-of-the-art model formulation. BFM was already successfully applied to several areas of the Mediterranean Sea (Vichi et al., 2003; Allen et al., 2002; Petihakis et al., 2009; Polimene et al., 2006). The BFM complexity is in line with current state-of-the-art biogeochemical models like PISCES and GREEN OCEAN. Moreover, many projects already started (EuroArgo, EuroSites, SESAME and the Italian VECTOR) will provide new biogeochemical data for the Mediterranean Sea that will be combined with models run in delayed or operational mode. This point will be included in the revised version of the manuscript to provide a justification of the choice of BFM, as requested by Ref.#2.

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