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Comment

Interactive comment on “Phytoplanktonic response to contrasted Saharan dust deposition events during mesocosm experiments in LNLC environment” by C. Ridame et al.

Anonymous Referee #1

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The authors utilized a quasi-nature ecosystem (called mesocosm experiment) to investigate phytoplanktonic responding to contrasted Saharan dust deposition events in the low nutrient low chlorophyll (LNLC) regions. This experiment included both inside and outside mesocosm to minimize the uncertainty caused by volume of container and ship movement etc. The experimental results showed the importance of dust pathway and the type to phytoplanktonic community. Besides, the relevant parameters (chemical and physical index) sampling at different depth and their similarities in three periods provide this reviewer more confidence for the representativeness and reliability of data. Overall, this is an interesting paper and is suitable for the readership of Biogeosciences. This reviewer has a few minor comments for the authors considering: 1)

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page 771, lines 5-13, the pathway of deposition and types of dust cause the different responses to phytoplanktonic community. In order to simulate the natural wet and dry deposition, EC and non-EC dust is mixed with ultrapure and sea water, respectively. Why not use the same dust to represent wet and dry deposition or different types of dust mixed with the same solution? 2) This reviewer also has a concern about the non-EC dust mimicking a dry deposition. The dust deposited into the Mediterranean Sea usually experienced the long transport and its characters should change more or less due to interactions with anthropogenic pollutants. The use of the untreated original dust representing dry deposition is questionable. 3) The discussion was focused on the change of the elemental concentration rather than phytoplanktonic responses. This needs revision. 4) Page 776, lines 7-11, the authors claimed that the size structure of phytoplanktonic community was changing towards larger cells with the process from R1 to R2. It is well known that larger unicellular algae are more competitive than the smaller one under a relative nutrient-rich condition. More explanation is needed. 5) This reviewer is also surprised why the authors didn't use the collected rainwater for their experiments. 6) The concentration of DFe dropped in the experiment of D-1-P,-Q, and D-2-R1, how can you consider that Fe was not a controlling factor of the phytoplankton growth.

Interactive comment on Biogeosciences Discuss., 11, 753, 2014.

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