

Reply to the interactive comment by Referee #1 on “Diatom flux reflects water-mass conditions on the southern Northwind Abyssal Plain, Arctic Ocean” by J. Onodera et al.

Overall I am satisfied with the authors’ response to the review comments regarding the scientific content of the paper. I also appreciate the addition of sea ice motion; this makes their conclusions more convincing. However, the manuscript must be corrected by a native English speaker before publication.

(author’s reply in blue text) We appreciate the review of manuscript and pointing out of careless mistakes and incomplete sentences for the publication in Biogeosciences. As the referee #1 suggested below, English text for Discussion and the revised part of the Introduction were carefully corrected by two native-English-speaking professional editors from ELSS, Inc. (elss@elss.co.jp, <http://www.elss.co.jp>). We hope the corrected manuscript is adequate for the final acceptance.

Some specific corrections to be made:

Introduction:

The introduction is still difficult to read, there is no connection between subjects and sentences, a lack of flow.

Based on the suggestions by referee #1, we revised some sentences in the Introduction. The English correction for the revised paragraphs was performed by two native English-speaking editors in the ELSS, Inc. as mentioned above.

More precisely:

In the first paragraph of the Introduction: There is no link among the 3 sentences. A better transition between sentences is needed and the intensification of sea-surface circulation should be better explained.

The additional sentences were inserted between original sentences. The knowledge on the influence of intensified sea-surface circulation to biogeochemical cycles was shortly mentioned.

Line 43: ‘to’ should be spelled ‘too’, but in fact the word ‘also’ should be used instead.

The sentence was corrected using the word “also”.

Line 55-56: ‘A long-term sediment trap experiment containing observation of diatom fluxes have been conducted in the Fram Strait (Bauerfeind et al., 2009)’: As it is this sentence is useless. If the authors want to mention this study they should provide some results or interesting conclusions that

37 came out of it.

38 The one of the conclusions regarding to this study was introduced by one sentence.

39

40 Line 72-73: As POC fluxes in the manuscript are presented in $\text{g C m}^{-2} \text{ y}^{-1}$, POC fluxes cited in the

41 Introduction should also be presented in this unit for comparison and not in mmol .

42 The POC flux value in the unit of mmol was transferred in $\text{gC m}^{-2} \text{ y}^{-1}$.

43

44 Throughout the manuscript, the name of the author should be changed to Lalande (not Lallande).

45 We apologize the mistake, and the spelling was corrected to Lalande.

46

47 Material and Methods and Results:

48 Since the diatom carbon fluxes were calculated, they should be presented first instead of the amount

49 of valves flux.

50 The regarding paragraphs were replaced in the sections of “Material and Methods” and “Results”.

51 The description on the diatom carbon flux was presented first, and description on diatom valve flux

52 was presented later.

53

54 Line 220-221: This sentence is incomprehensible.

55 The sentence was rewritten as follows: However, diatom flux and total mass flux in June–

56 September 2012 were low compared to those in summer 2011.

57

58 Discussion:

59 Again, many sentences need English revision.

60 The English correction was completely performed by two native-English speakers in the ELSS, Inc.,

61 as mentioned above.

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63 Figure 2 was missing.

64 All figures are included in the corrected manuscript.

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