Biogeosciences
Discussions

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Interactive comment on "Spatial variability in iron nutritional status of large diatoms in the Sea of Okhotsk with special reference to the Amur River discharge" *by* K. Suzuki et al.

Anonymous Referee #1

Received and published: 3 March 2014

Fig. 1: I find the station numbering to be confusing. Would it be possible to number the stations sequentially from proximity to Amur River outflow? This would reduce the need to constantly refer to Fig. 1 while reading the text.

P376 L18-24: bit of a reasoning gap. Ligands protect Fe from scavenging, so we need to know Fe bioavailability to determine Fe limitation?

P377 L3: suggest deleting "On the other hand"

P377 L21: just report dissolved Fe concentration in uM (not mg/L)

P377 L24: this value ($<0.2\mu$M) is representative of low-Fe HNLC waters, not just

pelagic waters

P379 L18-19: suggest moving "using the immunochemical Fd and Fld assays" to after "revealed" in this sentence

P380 L21: Niskin-X bottles, or are these a different set of bottles from those referenced above (L4)?

P381 L11: water was passed through 200μm after passing through 20μm? I believe this is reversed.

P381 L16: this Fd analysis is specific to diatoms? If so it would be helpful to remind the reader of that here.

Fig. 8: What constrains the upper limit in Fig. 8? Why do the fits not go higher? Is anything constraining the max Fd and Fv/Fm?

P386 L9: why is it necessary to assume that Fucox and Peri were derived from diatoms and dinos? Isn't the regression independent of this assumption?

P386 L24: Where is station E2? It isn't on map.

P387 L11-16: Are not both Fv/Fm and Fd indicators of physiological adjustments? Therefore, either measures might reflect Liebig limitation, and both measures may also change in response to nutrient stress.

P387 L23: delete "simply"

P388 L13-14: If comparisons between the two studies are difficult then it shouldn't be done in the preceding sentences. Otherwise, this sentence should be removed. You can't make the comparison and then argue against making the comparison when it doesn't match. Also, this is quite a long paragraph. Can it be split into 2 paragraphs?

P389 L17: delete "mainly". Also, in these discussion paragraphs you don't need to restate the correlation statistics which have been previously supplied in the results

sections. They serve to break up the text and flow of ideas.

P389 L24-25: two verbs in this sentence

P390 L23: the work of Marchetti et al. (2009, Nature, 457: 467) would be good to cite here, as they show diatom Fv/Fm dropping before growth rate in diatoms that have accumulated luxury Fe.

P391 L5: clarify that the diatoms mainly consisted of Chaetoceros concavicornis in this area (as opposed to in either area)

P391 L25: change "covers" to "cover"

P391 L3-9: not clear how this section relates to the previous section of the paragraph. Please clarify. Earlier you suggest that C. Concavicornis may have been light limited, but then you suggest that they may be low-light adapted.

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Interactive comment on Biogeosciences Discuss., 11, 373, 2014.

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