

***Interactive comment on* “Introduction to special issue: the TransBrom Sonne expedition in the tropical West Pacific” by K. Krüger and B. Quack**

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General

This manuscript gives the background to the Sonne cruise from Japan to Australia in October 2009. It summarises the scientific questions and gives a brief overview of the meteorological situation.

While what there is of the paper is OK, it is very lightweight. As it stands, it does not give a good enough overview of the cruise to justify being a standalone paper. If it is to remain as such, it should be strengthened by including an overview of the measurements made, the modelling tools being used to interpret the data, and a better rationale for cruise strategy. Taking these in turn,

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1. What measurements were actually made? I.e. what instruments were used and when did they operate? How many redundant measurements were made? And has it helped? I find it hard to see how this information can be given without an overview table. Similar information should be given for the modelling / interpretative tools and any satellite measurements used.

2. Did the Sonne sail straight from Japan to Australia or was there a scientific strategy so that particular experiments could be performed, e.g. 24 hour stands? Or was the route modified to be near coastal waters? More rationale is needed right at the beginning of Section 2. The current reference to an internal report is not enough.

Such information would significantly add to the substantive content of the paper. An alternative approach would be to add the contents of this paper to the planned paper on the meteorological conditions above the cruise track by the same authors. However my recommendation would be to strengthen this one.

Minor

The abstract is terse and is more about the special issue than the paper itself. The last sentence is not true. The findings from the cruise are not discussed – the topics are. The first paragraph of the Introduction would be a good start for a revised abstract.

Should CH₃I be written as ‘methyl iodide’ or ‘methyl iodide’? I assume the latter, but ACP must have guidelines.

Some acronyms are defined (NEC, NECC, SLP, SAT, SEC) which are hardly used. In such cases, it is much more helpful to the reader to use the full name.

1402, 19 ‘..Pacific along a unique...’

1402, 21 delete ‘for the investigations’

1403, 4 ‘..Pacific allows investigation of...’

1404, 15-17 this reference is not sufficient. A summary is needed here.

1405, 6 ‘After passing through this region where atmospheric composition was influenced by tropical storms, we crossed...’

1406, 16on ‘From 6S to the end of the cruise in Townsville (19S), the SST decreased to 25C as the Sonne passed through the Southern Equatorial Current.’

1406, 20/21 ‘There is a sharp drop...’

1406, 27 ‘...our meteorological measurements...’

1407, 6 on The tense in the paragraph varies between present and past. Does not matter which, but best to stick to one.

1407, 10 the storm is referred to as Melor earlier. Best to do the same here.

1407, 11 ‘...winds. The air pressure then...’

1407, 15 ‘...from the northeast.’

1407, 19 ‘..Fig. 3), which developed...’

1407, 18on I am not sure this paragraph is justified unless some results are presented in this paper. The bulk of the paper is about the project intentions, not the project results. It could be redrafted to say that the other papers in the special issue will show it.

Interactive comment on Atmos. Chem. Phys. Discuss., 12, 1401, 2012.

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