

***Interactive comment on “Air-sea fluxes of methanol, acetone, acetaldehyde, isoprene and DMS from a Norwegian fjord following a phytoplankton bloom in a mesocosm experiment” by V. Sinha et al.***

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The authors have presented some important data on the role of the ocean in VOC biogeochemical cycling. My comments are related mostly to the methanol data, where I think a reinterpretation is necessary: 1a. It is clear from looking at Figures 3 and 4 that methanol air-to-sea flux was always high when ambient methanol was high. That is to be expected for this nearly first-order process of deposition, controlled by high methanol mixing ratios transported from overland sources. Hence, I think the authors ought to work with deposition velocity instead of deposition flux to eliminate this

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external forcing. 1b. Having identified this problem, the authors may want to revisit their interpretation of the methanol data being of the same "general level" (page 9920, line 2) as compared to previous studies listed in Table 3. I would use only ambient data below a certain level (which could be identified using an anthropogenic tracer that the authors may have measured as well) more representative for methanol's general abundance over the oceans for a global extrapolation. Values higher than 3 ppb are certainly suspect. Looking at the data in Figure 3, wind direction may also be useful as a discriminator. 2. Even without correcting for this issue of ambient abundance, it appears from the data as if methanol air-to-sea flux is higher at night. If this is sustained after the above correction it would also indicate methanol production in this mesocosm during the day, linked to a biological or physical process, which is not surprising. 3. In essence, the effect of acetone abundance on acetone flux is also visible, though less obvious compared to methanol. See for example the data after midnight at 3 June 2005. However, as acetone mixing ratio sd is smaller, the author's data interpretations are less affected. Notable is the speculation on page 9921. In my opinion, data should not be extrapolated globally from an 18-h day from coastal data under conditions involving a light-driven compensation point. At the least, I think this (lines 12-19) should be carefully rewritten.

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