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## ***Interactive comment on “Quantifying environmental stress induced emissions of algal isoprene and monoterpenes using laboratory measurements” by N. Meskhidze et al.***

### **Anonymous Referee #1**

Received and published: 17 October 2014

#### General comments

The paper described results of detailed laboratory measurements of production rates of isoprene and monoterpene compounds from six phytoplankton monocultures as a function of irradiance and temperature. Their study found that monoterpene emissions were an order of magnitude lower than isoprene at all light and temperature levels. This is a challenging question. The results are original and of interest to the scientific community and worth to be published. This work focused on the impact of irradiance and temperature on production rates. However, within marine environment, ocean circulation, nutrients, salinity could also play important roles.

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## Specific comments

1. P13534, L11 "and temperature (18 to 30 C)": Why did you choose this temperature range? I would be exciting to see the work could be extended to a broader range of seawater temperature.
2. P13547, L18-19 "Figure 2 reveals very different isoprene production rates for *T. weiss.*, *T. pseud.*, *P. carter.* and *R. salina* on the second day (after 12 h of dark cycle).": Why are isoprene production rates on the second day different from the first day?
3. P13547, L28 "Table 2 summarizes monoterpene production rates": Do you mean isoprene?
4. P13548, L1 " averaged over a 2 h period ": Do you mean 12 h?
5. P 13554, L3-17. I think this part can be used to address my question 2. So I would like the authors to do some simple explanations after P13547, L18-19 instead of saying nothing.
6. P 13567, Figure2: Font size is too small. Too many y-axis ticks for Figure 2 (b). Could you put legend at the same position in each figures?
7. Font size for Figure 3-5 is too small.

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Interactive comment on Biogeosciences Discuss., 11, 13533, 2014.

**BGD**

11, C5939–C5940, 2014

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