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Interactive comment on “Seasonal in situ observations of glyoxal and methylglyoxal over the temperate oceans of the Southern Hemisphere” by S. J. Lawson et al.

Anonymous Referee #1

Received and published: 3 September 2014

This manuscript summarizes measurements of glyoxal, methylglyoxal and their precursor gases at two sites downwind of the remote temperate oceans. The paper concludes that 1) the two gases are present in low ppt concentrations, 2) the precursor gases are not sufficient to account for the measured glyoxal and methylglyoxal mixing ratios, and 3) the calculated vertical column densities of glyoxal and methylglyoxal are much lower than those retrieved by satellite.

The paper is well written and should be published in ACP with minor revisions.

Page 21661 line 17. . . .make a significant contribution to aerosol number

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Page 21661 Line 20. The organic matter is not necessarily from the SML. The bubbles likely pick up organic matter as they rise to the surface.

Page 21661 Line 22. It not an either or. Most likely it is both primary and secondary aerosol.

Have you tested losses of glyoxal and methylglyoxal in your inlet lines and on the cartridge during the 24 hour sampling period?

I think you need to at least mention the possibility that glyoxal and methylglyoxal and/or their precursor gases and/or semi-volatile aerosols could enter the boundary layer via entrainment from the free troposphere.

If the measured precursor gases can only account for 1-3% of the measured glyoxal and methylglyoxal mixing ratios, was is the needed carbon flux into the boundary layer to support the measured mixing ratios?

Interactive comment on Atmos. Chem. Phys. Discuss., 14, 21659, 2014.

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