

Interactive comment on “Seasonal dependence of peroxy radical concentrations at a northern hemisphere marine boundary layer site during summer and winter: evidence for photochemical activity in winter” by Z. L. Fleming et al.

Z. L. Fleming et al.

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The authors are grateful to both the referees for the thoughtful and insightful reviews.

All technical corrections have been made in accordance with both the referee’s suggestions.

Reply to anonymous referee 1

We recognise the sentiments expressed by the referee with respect to the conclusiveness of the evidence for the night time sources. The paper points to an interesting observation that is need of further more extensive observation and we hope that tone

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is struck in the paper.

The referee is correct that HCHO cannot, nor is it stated, account for the apparent behaviour observed in Figure 7. The discussion on page 7249 refers to the apparent shoulder or asymmetry in the peroxy radical diurnal cycle with respect to primary production ($j(\text{O}^1\text{D})$) that has been ascribed to HCHO photolysis. With respect to the potential for transport this has not been considered and a line has been added to reflect the potential influence of local meteorology. One of the advantages of working at heavily marine influenced sites is that it damps the effects of changing boundary layer heights.

With respect to the calculation of the net ozone tendency, the assumptions with respect to the calculation of f and the estimation of HO_2 and OH for the calculation of $L(\text{O}_3)$ are detailed in Salisbury *et al.* (2002). This reference has been added.

The tables have been corrected with respect to NO_x , NO and NO_2 . There was a glitch in the averaging software.

Interactive comment on Atmos. Chem. Phys. Discuss., 6, 7235, 2006.

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