

***Interactive comment on* “Spatial resolution of tropical terrestrial CO₂ fluxes inferred using space-borne column CO₂ sampled in different earth orbits: the role of spatial error correlations” by P. I. Palmer et al.**

Anonymous Referee #1

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The manuscript entitled "Spatial resolution of tropical terrestrial CO₂ fluxes inferred using space-borne column CO₂ sampled in different earth orbits: the role of spatial error correlations" of Palmer et al., submitted for publication in Atmos. Meas. Tech., covers an interesting topic, is very well written, and discusses new aspects. The manuscript is highly appropriate for Atmos. Meas. Tech. I recommend its publication after the comments listed below have been addressed by the authors.

Section 2, page 3255, line 6 and following: I wonder if the statement that glint obser-

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vations are better than nadir observations for tropical CO₂ land fluxes is really based on studies which have considered all relevant important aspects such as model transport errors (which will be more critical if far away ocean observation are used to get information on land fluxes) and systematic atmospheric CO₂ retrieval errors e.g. due to thin cirrus, which will result in errors also for glint observations (esp. in the tropics). If these important aspects have not been considered in detail in the cited publications I highly recommend to rephrase the bold statement that glint only observations are more effective.

Section 3, page 3257, line 4 and following (and Appendix A): Critical for this study is the identification of cloud free scenes. To what extent have (very) thin cirrus (including sub-visual cirrus) been considered ? Please add information on this important aspect.

Caption Fig. 2: Two times "and" in last sentence.

Interactive comment on Atmos. Meas. Tech. Discuss., 4, 3251, 2011.

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