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Interactive comment on “Partial pressure of CO₂ and CO₂ emission in a monsoon-driven hydroelectric reservoir (Danjiangkou Reservoir), China” by S. Y. Li and Q. F. Zhang

S. Y. Li and Q. F. Zhang

syli2006@163.com

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Interactive comment on “Partial pressure of CO₂ and CO₂ emission in a monsoon-driven hydroelectric reservoir (Danjiangkou Reservoir), China” by S. Y. Li and Q. F. Zhang

Li and Zhang syli2006@163.com (Li S.)

Dear referee, thanks for your comments. We could accommodate all the comments, and re-organise the structure of the ms and check the English carefully. This includes re-organisation of Tables and Figs. (Moving Tables, 2 and 3 to the supplementary material, and move the Fig. 6 to Fig. 2), update of methodology (detection limit, precision)

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and references, supplement of some key ancillary data such as O₂, chlorophyll and nutrients (N, P). Here we will attach the point-point response in the following. 1. In the section of “Introduction”. All the references are updated and context is correspondingly changed.

Abril G, Guerin F, Richard S, Delmas R, Galy-Lacaux C, Gosse P, et al. Carbon dioxide and methane emissions and the carbon budget of a 10-year old tropical reservoir (Petit Saut, French Guiana). *Global Biogeochem Cycles* 2005;19:GB4007. doi:10.1029/2005GB002457. Chanudet V, Descloux S, Harby A, Sundt H, Hansen BH, Brakstad O, Serça D, Guerin F. Gross CO₂ and CH₄ emissions from the Nam Ngum and Nam Leuk sub-tropical reservoirs in Lao PDR. *Sci Total Environ.*, 409, 5382-91, 2011. Delmas R, Galy-Lacaux C, Richard S. Emissions of greenhouse gases from the tropical hydroelectric reservoir of Petit Saut (French Guiana) compared with emissions from thermal alternatives. *Global Biogeochem Cycles* 2001;15:993-1003. Roland F, Vidal LO, Pachero FS, Barros NO, Assireu A, Ometto JPHB, et al. Variability of carbon dioxide flux from tropical (Cerrado) hydroelectric reservoirs. *Aquat Sci* 2010;72:283–93.

In the section 2.1. Information on sampling sites is added and Fig. 6. is moved here as Fig 2, the dates for filed campaign are supplemented in Fig. 2.

In the section 2.2, 2.3 and 2.4. We have revised the ms according to the referee, and the following references are added. Frost, T., and Upstill-Goddard, R.C.: Meteorological controls of gas exchange at a small English lake. *Limnol. Oceanogr.*, 47, 1165-1174, 2002. Guérin F, Abril G, Serça D, Delon C, Richard S, Delmas R, et al. Gas transfer velocities of CO₂ and CH₄ in a tropical reservoir and its river downstream. *J Mar Syst*, 66:161-72, 2007. Vachon, D., Prairie, Y.T., and Cole, J.J.: The relationship between near-surface turbulence and gas transfer velocity in freshwater systems and its implications for floating chamber measurements of gas exchange. *Limnol. Oceanogr.*, 55, 1723-1732, 2010. In the section 3 “Results”. A new paragraph is added for water quality data.

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In the section “Discussion”. A new Table demonstrating the relations between pCO₂ and water quality is provided, also, the scatter plots for some key variables are supplemented in Supplement Documents. We split the sampling sites to four categories including Han Res., Dan Res., Dam and river below the Dam. We correlate the pCO₂ with water quality variables with the considerations of season (wet and dry) and space (four categories).

We have revised all Tables and Figs based on the comments.

We attached a track-edit ms for review

Please also note the supplement to this comment:

<http://www.biogeosciences-discuss.net/10/C6102/2013/bgd-10-C6102-2013-supplement.pdf>

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