

## ***Interactive comment on “Technical Note: Large overestimation of $p\text{CO}_2$ calculated from pH and alkalinity in acidic, organic-rich freshwaters” by G. Abril et al.***

**G. Abril et al.**

g.abril@epoc.u-bordeaux1.fr

Received and published: 24 October 2014

additional figure Captions

Figure 1 A: comparison organic alkalinity calculated from pH and DOC using the models of Driscoll et al (1989) –which assumes a single apparent pK value for organic acids- and the triprotic model of Hruska et al. (2003) – which assumes three apparent pK values-. These two organic acid models applied to our data led to very similar organic alkalinity values (A). B: this calculated organic alkalinity was then subtracted from the measured TA. Then the  $p\text{CO}_2$  was re-calculated from the measured pH and the TA corrected from organic acids.  $p\text{CO}_2$  values corrected that way were still very

C6158

different from those measured in the field (B), although being sometime higher and sometimes lower than the measured values.

Figure 2 Non carbonate alkalinity (NCA), as the difference between the alkalinity calculated with the CO2sys program using pH and  $p\text{CO}_2$  as input parameters, and the measured TA. NCA derived that way, expressed either in concentration (A,C) or as percentage of TA (B,D) was often negative and was neither (or weakly when expressed as % of TA) correlated with DOC, nor with pH. No quantitative empirical relationship could be deduced from these plots.

---

Interactive comment on Biogeosciences Discuss., 11, 11701, 2014.

C6159