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Interactive comment on “Using O₂ to study the relationships between soil CO₂ efflux and soil respiration” by A. Angert et al.

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I quibble with the statement on line 27 of page 12052 that "this is the first report of directly observing this discrepancy (i.e. CO₂ flux versus respiration), based on O₂ measurements."

Figure 4.4 of Severinghaus (1995) provides a very graphic demonstration of this effect using O₂ measurements, where the effect is also explained in terms of complications of CO₂ chemistry in soil water. In some ways, the Severinghaus approach is even more compelling as an iconic demonstration because it shows that CO₂, rather than O₂ is the impacted species based on the much stronger temporal trend for CO₂.

I therefore think the above statement needs to be revised. A fairer statement might be

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that this BGD paper provide the first quantification of this effect using O₂ for intact soil profiles.

BGD

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