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

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