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Comment

Interactive comment on “Measurement depth effects on the apparent temperature sensitivity of soil respiration in field studies” by A. Graf et al.

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Received and published: 23 May 2008

Dear Graf et al., We are pleased with your manuscript related to measurement depth to determine Q10. Nevertheless, we would like to point out: As you mentioned in your manuscript, Q10 is often used for modeling of soil CO₂ efflux. Therefore, we consider that the best depth for temperature measurement is the depth with the highest R₂ between soil CO₂ efflux and soil temperature. This relation describes better the dynamic of soil CO₂ efflux, even though the Q10 value is underestimated. We published our experiment related to this topic last year (Pavelka et al. 2007, Dependence of the Q10 values on the depth of the soil temperature measuring point. Plant and Soil 292: 171–179). Our results show steep increase of Q10 values with temperature measurement depth. We found Q10 values 116 and 799 for the depths 20 and 30 cm, respectively.

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From our experience we conclude that the most suitable depth is close to the surface, at 5 cm we found $Q_{10}=5.1$ (please, have a look to our paper).

Best regards Marian and Manuel

Interactive comment on Biogeosciences Discuss., 5, 1867, 2008.

BGD

5, S641–S642, 2008

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