

Interactive comment on “A field-based method for simultaneous measurements of the ^{18}O and ^{13}C of soil CO_2 efflux” by B. Mortazavi et al.

B. Mortazavi et al.

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We would like to thank you for your constructive comments. In your general comments, you recommend "some modifications" and "improvements" before final acceptance of the manuscript. The modifications have been accomplished by replying to your general and specific comments and the manuscript has been improved by two native speaker. Below we will answer your specific comments. We have complied with your concern on the delta notation. In the revised manuscript we have inserted the delta notation accordingly. The editorial staff can decide on the R2 or r2 notation. We leave this option to the journal. We have clarified in the revised manuscript about the clarity of the technique used. Thank you. We have deliberated for a long-time about shortening the introduction of the manuscript, as suggested by you. We felt that by shortening the introduction we were not able to pin point all the confusing issued raised in the literature about the delta ^{18}O of soil CO_2 flux. Since the other two referees did not object to our introduction we have kept it for the most part as it is. We have shortened the method section and refer the reader to our previous publication on the GC-IRMS method.

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Specific Comments:

Abstract Section Line 6. We have corrected the sentence. Thank you. Line 12. The sentence has been changed to "...to that by chamber technique.

Introduction Line 25. We have inserted "carbon" in the sentence. Line 3 to 6. We have changed the sentence to "Because ...the atmosphere...Thank you. Line 8 and line 9. The sentence now conveys the exact meaning. Line 10. The sentence has been reworded according to your liking. Page 5. Line 7. The sentence has now been read by two native speakers and we believe that it conveys our "objectives" in this manuscript. The two other referees do not object.

Methods: The lat and long have been corrected. Thank you. Line 18. The native speakers recommended keeping the 2003 to avoid confusion. Line 24. Fig 2 has been changed to Fig.1. Thank you. 2.3 Soil CO₂ has been changed to Soil CO₂ Profile. Thank you. 2.4 Sequence of measurements has now been changed to Sequence of Sampling. Thank you for your suggestion. 2.5 Analysis has been changed to Stable Isotope Analysis. Thank you. 2.6 The statistical section has now been shortened. Thank you.

Results: Page 9. The delta notation is now systematically inserted in appropriate places. References: The Bowling references appear in the reference section according to the order in which they were cited.

Table and Figures: Table 1. You are suggesting that we shorten the table. In order to achieve that goal we would have to insert the information in the text, which would lengthen the manuscript. We have added information on the statistical significance according to the recommendation of the Florida State University, Statistical Consulting Center. Thank you. Figure 1. We have added the length information that you requested. Thank you. Figure 2. This figure indeed includes a caption. It provides examples of the Keeling plots. Figure 3. We have changed the sentence to read Depthmeasured on. Thank you. Table 2. Line 4. The typographical error has now been

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corrected. Thank you. Figure 5. The figure legend includes the shortest possible way of conveying the information. Figure 5. We have inserted SOM in the legend. Thank you.

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BGD

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