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Interactive comment on "Separation of soil respiration; a site-specific comparison of partition methods" *by* Louis-Pierre Comeau et al.

Anonymous Referee #1

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It is not an easy task to separate autotrophic and heterotrophic soil respiration. Five methods were compared and none was superior. Accuracy was defined by the difference with the ÉŮ13C-CO2 natural abundance. This is a risky approach because this method has a low precision. Fortunately an second low precision method (root regression) gave a similar estimate of the ratio between heterotrophic and total soil respiration. Strengths and weaknesses of each method are discussed and it is concluded that a combination of methods is needed. This is a thorough investigation on an important subject. The manuscript is well written and easy to read. The methods section is relatively long, but this is inherent to a methodical paper. Non accessible PhD and BSc theses, such as Farmer 2013 and Tong 2015, can be removed from the literature references.

I found some typos: At line number 13 still many uncertainties and unknown. Should be unknowns. 53 Review have been made. Should be reviews. 120 to quantify and CO2. Something missing? 172 AND 173 time inversion. What is an inversion of time? 223 potential air contaminations have to be considering. Considered. 239 could contains some portions of the roots respiration. Contain. 248 was statistically equal than. Equal to. 377 asindependent. Add space. 387 deciduousforest. Add space. 433 for 13 C Analysis. 13C.

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