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Interactive comment on "Variability of aboveground litter inputs alters soil physicochemical and biological processes: a meta-analysis of litterfall-manipulation experiments" *by* S. Xu et al.

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We performed a second literature search added 5 additional publications to our dataset and we believe we have included all the critical publications in our analysis. The referee rightly points out that there were several studies in the AGU meeting abstract database, which may meet our data selection criteria. However, these results have not been published, so the data cannot be included. We also only include in situ litter manipulation experiments from natural ecosystems. Studies were excluded if they were conducted in a controlled laboratory setting or the additional carbon was supplied as a very specific

single substrate, such as glucose, as it is unclear whether these studies are representative of processes in intact ecosystems. We believe we have identified and included all studies meeting the selection criteria. We agree with the reviewer that the responses of belowground processes to litter manipulation could be affected by experiment duration. To examine the time effect, the studies were initially classed by experimental duration: less than 1 year, 1 to 4 years, 5-9 years, and >10 years. Our results indicated that for most parameters, there were no significant differences among these four classes of experimental duration (See Table A2 in Appendix A). We mention this briefly in the revised main text and believe it is justified to analyze the general response pattern of the investigated parameters across studies of different experiment duration. For soil chemistry, we have assesseds the responses of the key parameters: pH, total soil C and N, dissolved organic carbon, dissolved organic nitrogen, extractable inorganic nitrogen and extractable phosphorus. For carbon process dynamics, we reviewed the common measured parameters, including soil respiration, microbial biomass, total soil carbon. We agree with the referee that other variables such as rhizosphere deposition, enzyme activity and priming effects, are also very important. However, there are very few in situ litter manipulation studies investigating those processes and the lack of data points precludes a meta-analysis of those parameters. We mention this briefly in the revised discussion of priming effects.

Interactive comment on Biogeosciences Discuss., 10, 5245, 2013.