Interactive comment on “On observational and modelling strategies targeted at regional carbon exchange over continents” by C. Gerbig et al.

Anonymous Referee #3

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The paper deals with an interesting and highly topical issue, regional carbon exchange over continents. However, it is a bit unclear on what type of audience the article is targeted. To a large part, authors describe their general viewpoints and opinions on the issue. They also review recent literature and briefly present their own simulation results. Considering wider audience, however, the style is somewhat rarefied. Therefore it might be worthwhile to honestly target the article to a smaller group and clarify and deepen the presentation of authors own results connected to this specific manuscript.

Detailed comments on the modeling errors and representability have already been given; thus just a few short notes are given here which deal with the presentation and interpretation of the results.
p. 1322 What means a typical tall tower? How would the results change for a surface site vs. tall tower?

p. 1322 The simulations were made for August 2002. Why was this period chosen, and how would you expect the results to change over the course of the year?

p. 1323 Equation (2): The footprint and surface flux functions should be explained in more detail, since they are central elements in the simulations. Please clarify, what will be the role of lateral boundary conditions in the light of current results.

p. 1329 A lot of attention is put on presentation of model-data-fusion system. Still it would be good to specify more clearly and in more detail the new points presented in this work.

p. 1332 A list of recommendations would indeed be a good addition here, whether in rank order or not.

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