

Interactive comment on “Optimizing CO₂ observing networks in the presence of model error: results from TransCom 3” by P. J. Rayner

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I am having difficulty reviewing this paper because I still do not fully understand the implementation of the GA algorithm as described. At this point, my review therefore is trivial in that I would like to get a clarification of some points. Once these are addressed, I can give a more substantial review. Here are my questions:

- 1) How many parameter values (index of possible observing sites) are in each of the 200 members when the algorithm is initialized? Is it 110 (one for each site), and the starting members simply differ in the order in which these parameters are arranged? Or is it something else?
- 2) At the end of the 500 iterations, one ends up with a population of 200 members, each made up of the same number of parameter values as in the initial set-up. Is that

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correct?

3) If statement 2 is correct, it is not clear as to what is being presented in Table 2 and Figs 1 and 2. I assume these are some summaries of this ending population - please clarify exactly what these are.

4) How is convergence tested for - I assume this is meant to be addressed in Section 2.2. But I find the explanation lacking in that it is not clear to me why an acceptable configuration from the test described translates into an acceptable configuration for the real experiments.

5) To what extent are the optimization results sensitive to the parameters used in the GA algorithm, and to what extent are the results dependent the fact that the GA algorithm itself is used in the first place?

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