

*This study quantifies the dynamic vegetation feedback factor and compares it with other fast feedbacks such as water vapour and cloud feedbacks. It also quantifies the changes in climate due to CO<sub>2</sub> physiological effect and fertilization (LAI changes). It should be admitted that many studies in the past (such as Sellers et al. 1996, Levis et al. 2000, Betts et al. 1997) have also performed similar simulations and quantified the various direct CO<sub>2</sub> effects. What is unique to this study is its ensemble approach to the same problem which provides uncertainty estimates in a single modelling framework. This study would be useful addition to the literature on direct CO<sub>2</sub> effects and dynamic vegetation feedback. The presentation is very good and the work is comprehensive and detailed. I recommend publication after the following minor comments are addressed.*

*1. Page 12969, Line 15 and Page 12970, Line 1: These are good places to cite the work by Bala et al. (2007 PNAS) which pointed out the location-specific effects of large scale deforestation using a comprehensive climate-carbon model.*

We will add the citation to Bala et al. (2007) at the suggested places.

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*2. Page 12972, Lines 25-26: Bala et al. (2006) obtain a global mean value of 0.65 and land mean value of 1.4K when all vegetation feedbacks related to direct effect of CO<sub>2</sub> is considered. This could be cited here for comparison.*

The study of Bala et al. (2006) will be cited here for comparison.

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*3. Page 12980, Line 4: “cover” should be “type”?*

Will be replaced.

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*4. Page 12981: Fig. 6 is discussed before discussing Fig. 5. The authors should consider rearranging the figures.*

Figures 5 and 6 will be swapped.

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*5. Page 12983, Lines 10-12: It would be good to cite Bala et al. (2006) here.*

A citation to Bala et al. (2006) will be added and included in the discussion.

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*6. Page 12985, Line 2: “Fig. 8b” should be “Fig. 9b”?*

Will be corrected.

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*7. Page 12985, Lines 20-29: The present discussion is incorrect. Since the correlation between T and E, and T and albedo both are negative, positive correlations should be unphysical. Accordingly, “negative” should be changed to “positive” on line 25.*

*Further, I believe the sign of the correlation between and E should be changed before the summation.*

We will rectify the discussion of the correlations of near surface air temperature with evapotranspiration and albedo. There is only a flaw in the description of the methodology, which will be corrected in the revised version of the manuscript. However, as the correlation between temperature and both albedo and evapotranspiration were computed after reversing the sign of the albedo and evapotranspiration, results shown in Fig.10 will not be affected.

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8. *Page 12987, Line 2, “less” should be “more”?*

Will be corrected.

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9. *Page 12988, Line 10: Change “global temperature” to “global mean temperature”*

Will be changed.

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10. *Page 12988, Line 26, second word: “vegetation” should be “vegetation feedback”*

Will be corrected.

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11. *“Fig. 6c” is not at all discussed in the paper. You can remove it.*

We will keep Figure 6c and in the revised manuscript we will include a short paragraph where we discuss it.

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12. *There should be significance testing in Fig. 3, 4, and 7*

All values in Fig. 3 and 4 are significant at the 5% level. For these two figures we will specify in the caption that all values are significant.

In Fig.7 we will add dots to the maps where values are significant at the 5% level.