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The manuscript has been largely improved. It is suitable for publication after addressing these comments:

1. P10735 L5: “Yuan et al. (2011) processed the MODIS Collection 5 LAI data with a quality control algorithm in order to diminish uncertainties and inconsistencies”. Has this method been used in this study to process the MODIS LAI?
2. P10738 L4: Since “As previously shown by Guenther et al. (2006) and Arneth et al. (2011), isoprene emissions are very sensitive to the driving meteorological data, especially temperature and solar radiation”, why the MS only considered the sensitivity of isoprene emissions to PAR. Moreover, “radiation” should be “radiation”.
3. In Section 3.2.1-3.2.6, authors separated the different input data with results. It is easy to confuse readers. So I suggest to combine the description of different input data and results in the one section.
4. The same as sensitivity analysis. Section 4.1 can be removed. Moreover, Table 3 is not needed while Table 4 is used.
5. As for REA data, why there are negative values? Authors should explain the reason and the negative emission fluxes of isoprene and apinene should be excluded during the calculation.
6. As shown in Fig.13, the results obtained by bottom-up method tend to be higher than that obtained by top-down method. More discussion should be given to explain it.
7. Eq (2) cannot be found.