**Biogeosciences**
Discussions
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# Interactive comment on "The relative contributions of forest growth and areal expansion to forest biomass carbon sinks in China" *by* P. Li et al.

## Anonymous Referee #1

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The authors do a good job of reporting what the title suggests, evaluating spatial (six regions) and temporal (six inventories) patterns in the relative contributions of biomass growth/hectare and areal extent to increased carbon storage in the forests of China. The work extends previous analyses of the data from Chinese forest inventories by considering these spatial and temporal patterns.

The work is solid; the presentation is clear. I have only two concerns.

First, the biomass expansion factor (BEF) doesn't seem to account for differences in wood density, or, at least, the authors don't mention their assumptions concerning wood density. Was one value used throughout? Is it possible that planted forests have

a different wood density than natural forests, or that there have been changes through time?

Second, the results would be better integrated and more compelling if there were a summary Figure that went beyond relative. The authors should consider a summary Figure (Fig. 5) that shows total biomass (PgC) (all forests) through time. Fig. 5a might break the total into natural and planted forests, and Fig. 5b might break the total into those resulting from growth in biomass density and those resulting from changes in areal extent. Such a Fig. would show the relative sizes of these different components to the 30-year gain in biomass. It would make the paper appeal to a wider audience.

Minor comments

Abstract, line 13: The authors might consider adding "(which account for ??% of all forests)" after "natural forests…." The natural forests must account for a rather small fraction because the findings for planted and total forests are similar despite the reverse contribution of growth to natural forest sinks.

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