Hydrology and
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Discussions

Interactive comment on "Impacts of land use/cover change and reforestation on summer rainfall for the Yangtze River Basin" *by* Wei Li et al.

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General comments:

In general, I think the paper has interesting results and could be published. However, the quality of English needs to be improved in some parts (mainly abstract, introduction and methods). Moreover, I miss details in your method such as your definition of summer (i.e. which months are analyzed) and details on the land use maps (e.g. a table with percentages) and how they are included. I think the paper would benefit from analysis of an additional parameter for extreme precipitation, such as rainfall above the 90th percent as with 10 years of data (i.e. 900 data points assuming a summer of 3 months) the 99th percentile alone might be misleading. Furthermore, I miss an expla-

nation why precipitation is thought to increase with further reforestation but decreased between 1990 and 2010 though forest cover increased. Also, I wonder why Shrubland (USGS code 8) and Savanna (USGS code 10) are chosen as a type of forest? Judging from the LANDUSE.TBL these classes are much more similar to Cropland and Pasture than forest, so I wonder if expanding these makes a difference or if you are mainly looking at the effect of the additional Broadleaf forest. I think the figures need work and should become more informative than mainly barplots and spatial difference plots.

Specific comments:

The number and quality of references in the first section of the Introduction is poor. I am sure there is more work done on LUCC changes that is more relevant to your work than done in Burkina Faso and Scandinavia. You can also leave these out as you mention more relevant ones later on.

Adding a table to figure 4 with the percentages of LU classes would be more informative.

How are the 32 vertical levels of the model spread? Are there enough layers near the bottom to trust the surface values you are evaluating such as skin surface temperature and 2-m relative humidity?

In Figure 5c (and others), why not show a qq-plot of model and observed rainfall instead? 50th percentile is not interesting to show and analyze.

It seems urbanizations plays a role in the precipitation decrease between 1990 and 2010. Please consider using an urban scheme in WRF.

Why are the two areas (ALL-YRB) and (CTF-YRB) analyzed separately? Is there a rational in being interested in the converted areas specifically? Is analyzing more populated areas separately more interesting perhaps? As that is where the impact will be felt, not in the new forests.

Line 275-277 please reconsider/rewrite.

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