

Interactive comment on “Moisture sources contribute to precipitation change in the Three Gorges Reservoir Region during 1979–2015” by Ying Li et al.

Anonymous Referee #2

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This paper studies the contribution of moisture sources to precipitation in the TGR region from 1979 through 2015. It does so by numerically tracking the moisture sources of annual and seasonal precipitation, by identifying the main sources that determine the interannual variability of precipitation and by analyzing the differences in moisture sources and their transport during extreme years over the region. The paper illustrates the trends in annual precipitation and the annual and seasonal variability very well over TGR. To further look into the sources of moisture, the study divides the region into western and eastern parts and uses the moisture tracking method over the two domains to quantify the contribution from different regions. Contribution to the WP is thought to mainly come from the Indian monsoon system where as the EP comes

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from the EA monsoon system. In this case how the region is divided into the two domains could influence the results, some more analysis of the domain extent could establish this relation further. Similarly, contribution from ocean, land and local recycling are also analyzed, showing land sources being dominant, these results are more convincing. The spatiotemporal trends of moisture sources on precipitation with decreasing trends of moisture contribution mainly come from Indian monsoon and with a marginally increasing trend of moisture contribution from local recycling - all good reasoning, however, correlating the annual TGR precipitation to the different regional moisture sources is not enough to say that the variability in these moisture sources cause the changes in TGR precipitation. The analysis of extremes has just 3 sample years each for wet and dry conditions, can the sample size be increased? The paper used the Water Accounting Model-2layers to simulate the moisture transport and to quantify and pinpoint the sources of moisture well, although the method has limitations it has been used quite effectively in this study.

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