Hydrology and
Earth System
Sciences

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Discussions

Interactive comment on "Attribution of satellite observed vegetation trends in a hyper-arid region of the Heihe River Basin, Central Asia" *by* Y. Wang et al.

Anonymous Referee #2

Received and published: 24 March 2014

"Attribution of satellite observed vegetation trends in a hyper-arid region of the Heihe River Basin, Central Asia" by Wang et al. used satellite based vegetation index and rainfall data to differentiate climate vs. human activity impact on vegetation greening up in an arid region in China. This is a very interesting study and the research is carefully conducted. I generally support a publication of this manuscript but the following two comments should be considered during the revision stage.

First, the separation of irrigation and non-irrigation is a key step in this study. According to the authors, they used NDVI of 0.1 as a cutoff value to differentiate these two areas (Page 1535 Line 10-15). How to validate the 0.1 threshold? This needs elaboration

and validation. Furthermore, the authors mentioned that it's difficult to distinguish agricultural vegetation from native vegetation. I was wondering whether harvesting time would be useful here. For example, if there's a common harvesting period in this region, the authors could do a analysis after harvesting and use spectral difference in the crop residuals and natural vegetation to distinguish them.

Second, the authors used an analytic framework to demonstrate their method foundation, which is very helpful. At the same time, I think it would be useful to comment on the uncertainty in the method in terms of both their analytic framework and datasets used. For example, the spatial resolution of MODIS and rainfall data are not the same, is there any consequence?

Interactive comment on Hydrol. Earth Syst. Sci. Discuss., 11, 1529, 2014.