RC 2

Dear authors of the manuscript "A dataset of standard precipitation index reconstructed from multi-proxies over Asia for the past 300 years", this is an interesting and fruitful work. The authors reconstructed the gridded precipitation dataset over Asia using the new method and the new dataset. I learned new information for the new method. I recommend this manuscript is accepted for publication after a minor revision.

Major comments:

1. It is suggested to compare this reconstruction with other four reconstructions. e.g., the correlation map.

   Accepted and added (Line 268-278 with Fig 10 and 11) as follows:

   In addition, the maps of correlation between our wet season SPI reconstructions and four reconstructions in monsoon Asia by previous studies show that most of grids pass 0.01 significant level (Fig. 10-11). Specifically, for the correlation (Fig. 10a, Fig. 11a) between our wet season SPI reconstruction Version A/B and the JJA precipitation reconstruction by Shi et al (2018), there are 63.2%/64.1% of all grids passed the 0.01 significant level, in which the value of correlation coefficients for central eastern China are almost higher than 0.60. Similar results are also found for the correlations between our reconstruction versus the May-September precipitation anomaly reconstruction by Shi et al (2017) in China (Fig. 10b, Fig. 11b) and the May-September precipitation reconstruction over monsoon Asia (Fig. 10c, Fig. 11c) by Feng et al (2013). Even for the correlations between our wet season SPI reconstruction versus JJA PDSI reconstruction for monsoon Asian (Fig. 10d, Fig. 11d) by Cook et al (2010a) only using tree-ring, 57.4% (for our reconstruction Version A versus JJA PDSI reconstruction) and 58.8% (for our reconstruction Version B versus JJA PDSI reconstruction) of all grids passed the 0.01 significant level.

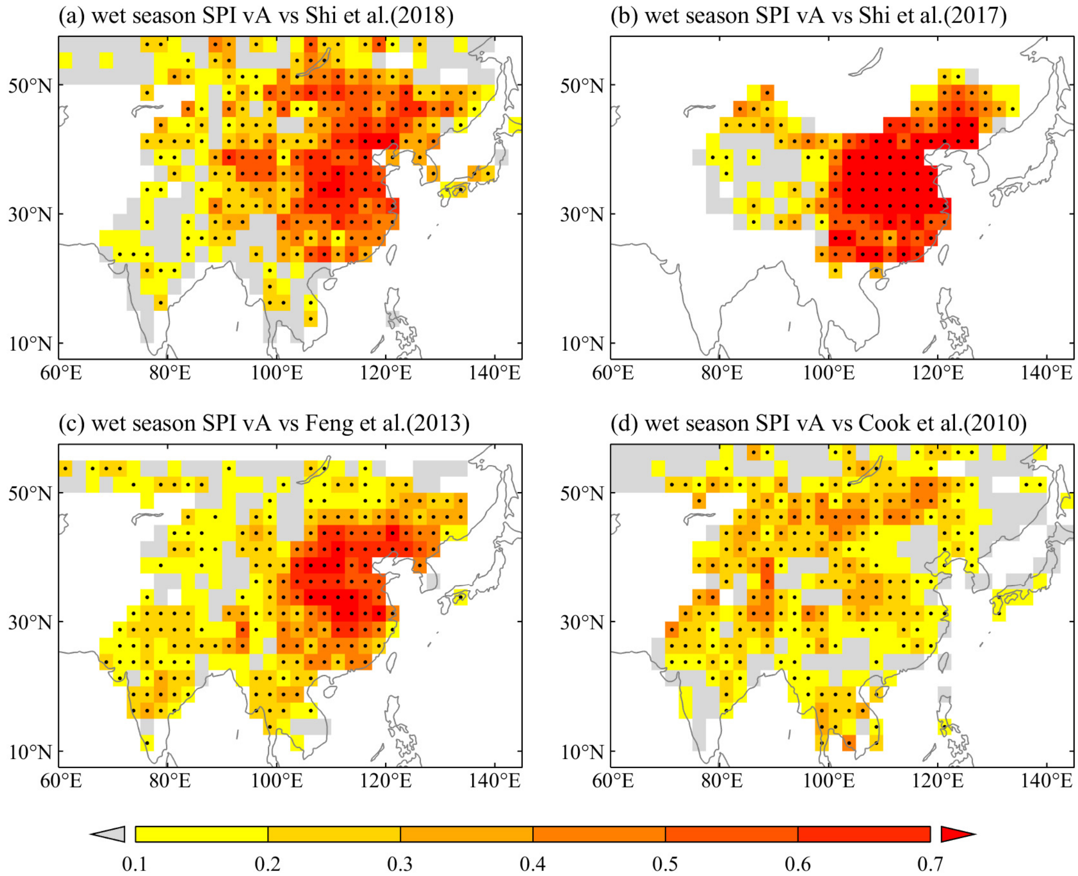

Figure 10: The maps of correlation between the wet season SPI reconstruction Version A of this study and four reconstructions in monsoon Asia by previous studies of Shi et al. (2018) (a), Shi et al. (2017) (b), Feng et al (2013) (c) and (Cook et al, 2010a) (d) respectively. Correlation values significant at 99% confidence are shown by dot marker.

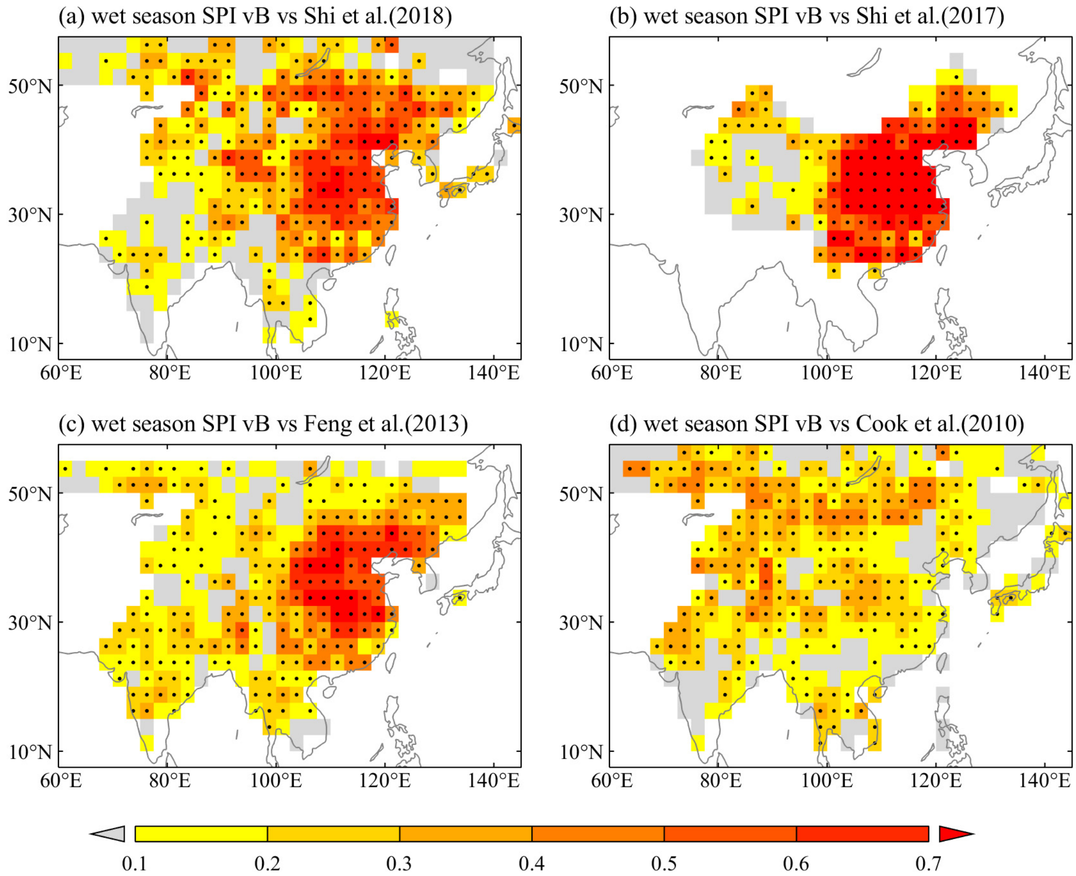

Figure 11: Same as Figure 10 but for the wet season SPI reconstruction Version B.

2. It is encouraged to archive the raw data and detailed information of all proxy records in the public database.

Accepted and revised. We added a table for all proxies used in this study (including their location, time coverage and original source) to help users comparing our proxies with any other public dataset.

Specific Comments:

1. Page 4, Line 121, replace 'Cma' with 'Chinese Academy of Meteorological Science'.

   Accepted and revised.

2. Page 6, line 186, the leave-one-out cross validation is not a correct way to validate the regress

model for highly autocorrelated time series, e.g. the tree-ring width chronology. It is encouraged to use a split calibration-verification procedure.

Accepted and revised. We change the cross validation method by a state-of-the-art 4-fold rolling window cross-validation procedure (Nguyen et al., 2020). The related information in the paragraph is rewrote as following with all related data updated in the dataset.

Then, we use BSR to establish 4 calibration equations for SPI reconstruction in 1700-1738, 1739-1942, 1943-1997, 1998-2000 respectively, in which the best subset selection is determined by maximizing the Coefficient of Efficiency (CE) (Cook et al., 1994) calculated by a state-of-the-art 4-fold rolling window cross-validation procedure (Nguyen et al., 2020). Another commonly used validation parameter, reduction of error (RE), is also calculated from the same procedure. (Line 213-217)