

The present study comprehensively explored the relationship between monsoon onset dates and large-scale climate variability by examining a set of Australian monsoon onset indices and climate indices. It is shown that the many of the previously proposed relationships between monsoon onset and climate drivers are less robust considering an extended dataset. The results have significant implications for weather prediction and climate projection. I suppose it is publishable given a few minor edits.

Comments:

1. Figure 1. I found this plot too busy. One way to make it easier to read might be to illustrate the dates using curves and dots (x-axis being time and y-axis being onset date), instead of bars. Also, it'll be interesting (and informative) to group the indices into a couple of groups, for example, indices based on precipitation v.s. circulation, and briefly discuss how these indices compare with each other.
2. Figure 2. Could you please put error bars on the mean?
3. Lines 453-458. The two explanations can be roughly tested, by examining different chunks of data. The current dataset covers 72 years (1950-2021), while Drosdowsky (1996) used a data set of 36 years (1957-1992). (1) The authors could split 1950-2021 into two 36-year subsets and examine the spread between the first subset and latter one. (2) One might be able to obtain some more insights using bootstrapping or other statistical methods.