

Weather Clim. Dynam. Discuss., referee comment RC2  
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## **Comment on wcd-2021-11**

Sugata Narsey (Referee)

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Referee comment on "Seasonal climate influences on the timing of the Australian monsoon onset" by Joel Lisonbee and Joachim Ribbe, Weather Clim. Dynam. Discuss.,  
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This study nicely summarises the relationship between Australian monsoon onset (defined in numerous ways) with seasonal climate indices often cited as relevant to the Australian monsoon. As found in previous studies on Australian monsoon onset they have highlighted the inconsistency between the many metrics for onset, and they also highlight the difficulty in reproducing many of the findings from previous studies. With the reproduced onset metrics, they show that the timing of onset is not strongly related to any of the seasonal climate indices, and that the best known link (with ENSO) appears to have weakened when using a longer time period.

The manuscript is well-written, and well supported by analysis and evidence. The presentation of results could be a little more structured, for example a single table with all onset definitions (rows) and all climate indices (columns), with correlation coefficients in bold text wherever significant might make the paper much more useful as a resource.

I recommend publication with minor revisions.

Specific comments:

L64-75: Does the dynamical monsoon onset deliver more rain than the start of the wet season? Can't these impacts happen before the dynamical onset? The rainfall-only metrics may be more relevant to monsoon impacts such as floods, water resources and so forth, and may correlate better to climate indices.

L77: It's not clear to me why seasonal scale variability should strongly modulate the timing of onset, which by definition occurs on a sub-seasonal time-scale! MJO, mid-

latitude troughs, etc, are all known to be important. Can you expand on why you are trying to do so? Presumably for planning beyond synoptic timescales.

L410: Interesting that the Troup definition lag-correlates reasonably well with the Amundsen Sea Low, and the Antarctic Oscillation. Presumably somehow through mid-latitude variability? See Berry and Reeder study.

Reviewed by Sugata Narsey, BoM.