

Hist. Geo Space. Sci. Discuss., referee comment RC1  
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## **Comment on hgss-2022-11**

Anonymous Referee #1

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Referee comment on "A pioneering time of discoveries in large-scale tropical meteorology: 1960 through 1972" by Roland A. Madden, Hist. Geo Space. Sci. Discuss.,  
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Review of "1960 through 1972, a time of discoveries in large-scale tropical meteorology" by Rol Madden, submitted to HGSS.

This charming paper is a personal reflection of the developments in theoretical meteorology, data availability, and computational power and algorithms, that led to the discovery and publication of the seminal papers on the MJO by Madden and Julian (1971, 1972). It was an absolute pleasure to read and made me realise how important it is to document the history of discoveries in our scientific field, and how the combination of external factors combine with having the right people in the right place at the right time.

The long term impact of the MJ71 and MJ72 papers cannot be overstated. In particular, the famous schematic of the MJO in MJ72 is still used (I saw it two weeks ago in a research seminar) 50 years on.

We normally think of the satellite era (post ~1974) as the era which revolutionised meteorology with a proliferation of new data. But this paper makes it clear that the 1960s was also a period of great advances, with long time series from radiosonde stations available for the first time. This coincided with new developments in atmospheric theory (in particular the equatorial wave theory of Matsuno), and powerful computers and a ground breaking new algorithm (FFT) and application of a relatively new field (spectral analysis) to meteorological data. Together this led to a fascinating detective story where a hitherto completely unknown phenomenon (the MJO) was discovered, and then comprehensively documented and interpreted. I still find it amazing now to think that this was all done using spectral analysis on a small number of radiosonde stations scattered across the tropics.

I recommend publication. The author might note the following typos below.

Line 27. University of Tokyo.

L34. The --> they.

Page 10. L13. clock speed of 10 mHz. Should that be 10 MHz? I know computers were slow then, but they weren't that slow were they?!