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## ***Interactive comment on “A numerical study of the early stages of a tropical cyclogenesis in relation to the MJO” by J. Guerbette et al.***

### **Anonymous Referee #1**

Received and published: 16 October 2015

Recommendation: Reject

### Synopsis:

This paper examines the formation of a tropical cyclone within the MJO during the DYNAMO field campaign. The event is simulated using a mesoscale model and the results are analyzed to examine the role of barotropic conversion. The analysis is fairly superficial and no new conclusions are drawn. The paper would need significantly more figures and analysis for it to be published.

### Major Comments:

1. The paper is poorly organized. Significant portions of the methodology are intermin-

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gled with the results. This conflation makes it very difficult for the reader to follow the train of thought on either aspect.

2. All of the analysis and conclusions of this study could have been done simply with reanalysis and best track data. The model simulation is completely tangential to the conclusions.

3. Fig. 1: The MCS initiates very close to the model domain. Wouldn't it make sense to extend the domain westward?

#### Minor Comments:

1. P. 4921, line 7: The Southwest Indian Ocean actually averages 8-9 tropical storms per year and is arguably fifth behind the Northwest Pacific, Northeast Pacific, North Atlantic, and Australia (Schreck et al. 2014)

2. P. 4921, line 13: Please clarify that this is meridional shear of the zonal wind.

3. P.4922: Seems like it would be worthwhile to include at least one or two satellite images.

4. P. 4923, line 9: Previous page said the model was run for 20–30 November, so how is it traced from 3 December?

5. P. 4924, line 20: This convective flareup seems like it might play a key role in the genesis. Or at the very least should be shown more clearly.

6. P. 4925, line 4: To be clear, a 10-day running average equates to a roughly 20-day lowpass filter. Further, how is the 10-day filter/average achieved when the model is only run for 10 days?

#### References

Schreck, C. J., K. R. Knapp, and J. P. Kossin, 2014: The Impact of Best Track Discrepancies on Global Tropical Cyclone Climatologies using IBTrACS. *Mon. Wea. Rev.*, 142,

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3881–3899, doi:10.1175/MWR-D-14-00021.1.

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Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., 3, 4919, 2015.

**NHESSD**

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