

The reviewer comments are in black and our responses are given below in blue.

This paper represents a “proof of concept” study of the so-called “marsupial paradigm” put forward by Dunkerton, Montgomery, and Wang in their recent ACPD study. The paper is well written and the evidence presented certainly provides compelling support for the paradigm in my opinion. For the most part the text and figures are right to the point and straightforward, although jargon gets a bit in the way in a few places. I think the paper is in good shape overall and needs only some minor revisions. I recommend emphasizing one point, which is the fact that the wave studied displays many of the features of classical Pacific easterly waves. I think that this would help strengthen the authors’ case even more. A related, but thornier issue concerns the tendency by many researchers and operational forecasters to classify virtually any westward disturbance within the ITCZ as an “easterly wave”. While this issue cannot be dealt with in any detail here, I believe the problem should at least be pointed out (see below).

We have made a note of this useful point in the revised manuscript.

Regarding the footnote on Chen’s analysis: this approach does not attempt to distinguish between easterly waves and other waves such as mixed Rossby-gravity and equatorial Rossby modes, which Dickinson and Molinari, and Frank and Roundy, among others, have also implicated genesis in the northwest Pacific. While this could be a messy can of worms that the authors may not want to get into here, it is a potentially serious factor for the operational use of the authors’ approach as well, which relies heavily on the “easterly wave” path to genesis. This is not to say that the marsupial approach wouldn’t be able to identify a “pouch” for these other disturbances, but at least a mention of these issues, and the fact that there is ongoing work in progress to reconcile these different views, seems warranted.

Agreed. The reference to Chen's work serves to illustrate that there is a school of thought that believes wave activity is more prominent in western North Pacific tropical cyclone formation (e.g., Molinari et al. 2004) than many researchers are willing to believe. The different types of waves that can potentially form a tropical cyclone are elucidated well by the references mentioned above. While we care deeply about the different types of waves, the questions of how they lead to tropical cyclogenesis, and whether or not they can be analyzed in the marsupial framework must await future study. Nuri represents a useful and illustrative easterly wave case that represents a first step in a long process to explore the utility of the marsupial paradigm in this basin.

Before closing this rebuttal, we would like to note that research is underway to study different types of western North Pacific waves and how the marsupial paradigm could be applied. A particularly interesting case involves Super Typhoon Man-yi, whose precursor disturbance was an equatorial Rossby wave to which some of the marsupial ideas seem applicable (Lussier et al. 2009, Ph.D. dissertation).

Are the authors speculating that the convection to the south was the source of a spin up of additional vorticity that caused the “sweet spot” to move southward? It seems that this

would then have to be due to a southward movement in the critical latitude, since the trough axis location is nearly meridionally oriented in Fig. 8. It also seems from Fig. 8 that this spinup may have also retarded the steady westward movement of the sweet spot.

We agree to some extent with the reviewer. Although the instantaneous critical latitude (and hence instantaneous sweet spot) certainly shifts slightly south as a response to the convection there, the eventual storm center is still controlled largely by the intersection of the parent wave's trough axis and critical latitude in the lower troposphere (see Figure 5 of revised mss.).