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Atmospheric Chemistry and Physics Discussions

Interactive comment on "Observation and a numerical study of gravity waves during tropical cyclone Ivan (2008)" *by* F. Chane Ming et al.

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The text of the paper (supplement in pdf included) has been revised paying attention to interactive comments on "Observation and a numerical study of gravity waves during tropical cyclone Ivan (2008)" by F. Chane Ming et al. Figures have been preserved. Responses and modifications within the manuscript are mentioned below.

Anonymous Referee #3 Major Comments:

1. Scientific questions have been better addressed in the introduction and the conclusion has been rewritten to be more comprehensive and to provide conclusion of each subsection and comparison. 2. Data and calculous have been checked. 3. Analyses strategies introduced in previous papers could be applicable with the cur-

rent simulation results but the authors propose propose other efficient methods based on signal and image processing to analyze and visualize multi-scale structures of observed GWs. They could complete the other methods. Extraction and visualization of observed waves are important to support the reality of results. It is often neglected in some papers because it is not easy to do. In particular we show that multiscale analyses (CWT and 2-D FFT) are adapted to analyze multi-scale structures of TC-related GWs. 4. GWs with horizontal scale $\sim$600 km is not the major finding (refer to scientific questions and part 7). The study also characterizes a wide range of horizontal scale from (>32 km and < 2000 km) and examines their spatial location and. In comparison with previous studies, we use a single large domain with an horizontal grid of 4 km and explicit convection and a good finer description of TC structure. In addition the paper proposes mecanisms on the generation of some GWs in particular modes of 400–600 km which is consistent with previous studies on asymmetries of TCs. Finally the paper proposes future studies for more detailed descriptions.

Minor comment: The manuscript has been rewritten taking into account of referees' comments to improve the reading and to discriminate the authors' results, specially in the conclusions.

Please also note the supplement to this comment:
http://www.atmos-chem-phys-discuss.net/13/C6398/2013/acpd-13-C6398-2013-supplement.pdf

Interactive comment on Atmos. Chem. Phys. Discuss., 13, 10757, 2013.