

Interactive comment on “Response of near-inertial energy to a supercritical tropical cyclone and jet stream in the South China Sea: modeling study” by Hiu Suet Kung and Jianping Gan

Anonymous Referee #2

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In this study, near-inertial oscillations (NIOs) generated by a tropical cyclone (TC) and modulated by a background jet stream are simulated. The proposed work is meaningful, and the results are encouraging. However, a few points need to be clarified:

1. Line 61: the transport of KEni is modulated by the velocity and vorticity of a jet stream. This jet stream plays an important role in this study and more descriptions and explanations on the stream is necessary. One reference (Gan and Qu, 2008) has been cited by the author on Line 61, but no further description on the jet. Under what condition will the jet stream exist? Is the intensity/velocity of the stream changes a lot?

The jet stream is lumped with the NIO generated by the TC, and this interaction is

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nonlinear. The intensity/velocity of the stream will significantly affect the interaction. Is the stream located in its typical location with its typical velocity during the typhoon season? If a reader wants to know how much KEni will be generated and how the NIO propagates, which is the main topic of the present study, he would want to know whether the scenario used in this study is applicable.

2. Line 98: how the TC forcing is exerted on the sea surface is not clearly explained. CCMP provides the wind speed at 10 m high, can it represent the drag direction on the sea surface?

3. Line 99: Fairall et al. (2003) is not listed in the References.

4. Line 114 : The author emphasizes the model is well-validated, but these validations are in a general sense. Is there any evidence that NIOs can be properly simulated by this model? Some validations should be presented in the paper. For example, the near inertia component of the model can be compared with that of the ADCP data measured by the station shown in Fig. 1.

5. Line 273: eq. (3) is out of nowhere. Please provide references for eq. (3).

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