Nonlinear Processes
in Geophysics
Discussions

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Interactive comment on "Time dependent Long's equation" *by* M. Humi

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Author Response to Referee comments

Time Dependent Long's Equation by Mayer Humi npg-2014-86

First I would like to thank the referees for their thoughful comments which will help me improve the quality of this paper.

Response to Referee #1

1. A comment about the weak compresibility nature of eqs 1-4 will be added to to the revised manuscript.

2. A discussion and comparison with JFM paper the referee is quoting will be added as the referee requested.

3. A comment on eq 26 and potential flow will be added to the revised manuscript.

4. A section on "summary and conclusions" will be added to the revised paper

Response to Referee #2 1. As far as I know, in most papers on Long's equation and gravity waves the second scaling is not done. This is so in order to make obvious the impact that the atmospheric conditions which are encapsiluated in the parameters β and μ have on the creation of gravity waves. I followed this route in my paper. The second scaling introduces a non-dimensional vorticity function which is **different** from the flow vorticy $\nabla \times v$ (unless $\mu = 1$) and I feel that this distinction should be emphsized. I shall be happy to clarify this issue further in the revised paper.

2.The example in the paper has the same settings that were used in some of the litrature (to analyze data gathered experimentally about the nature of gravity waves generated over topography (see e.g the paper by Jumper et al 2004 and other in the bibliography). I shall add a comment to this end in the revised paper.

3. Many thanks for correcting some typos. I shall take care of these.

I hope that in view of these comments this referee will change his position regarding this paper.

Sincerely, Mayer Humi