

Interactive comment on “On the spectrum of vertically propagating gravity waves generated by a transient heat source” by M. J. Alexander and J. R. Holton

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Because the spectrum of waves generated in our model is a complicated 6-dimensional function (three spectral parameters, plus space and time) we felt the variety of different spectral analysis techniques and plotting methods each illuminated unique features of the wave field generated in the model. One of the unusual features pointed out by the Referee is the tendency seen in Fig. 4 for the longest horizontal wavelength waves also have the longest vertical wavelengths. Because the wave amplitudes are weak, a traditional spectrum would not show this feature. We do not place much emphasis on the most extreme long horizontal wavelengths in this plot where the vertical wavelength plunges to smaller values (creating the appearance of "a peak") because the amplitudes become so small there (see Fig. 3) that those results aren't likely physically significant.

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Regarding Figure 10, our discussion of the "vertical wavenumber m increasing linearly with time" specifically refers only to locations far from the source, and indeed at these locations the waves are hydrostatic (p. 1074).

Interactive comment on Atmos. Chem. Phys. Discuss., 4, 1063, 2004.

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