

Interactive comment on “A numerical study of mountain waves in the upper troposphere and lower stratosphere” by A. Mahalov et al.

Anonymous Referee #2

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This paper contains a modeling study of the generation and evolution of mountain waves. It is found that secondary waves are created with shorter wavelengths (Fig 9), and that they may be generated by the shear instability, as they occur along the mtn wave phase lines. The modeling results are compared with radiosonde and aircraft observations, and the agreement is found to be quite good (Fig.19). I really enjoyed this paper, and think it is an excellent study on this topic.

Minor comments:

pg 13, line (l) 27: do you mean $1 < y < 20$ km instead?

pg 17, l 1: say whether the models results are 2D or 3D.

Fig 2. Are the scales wrong for the Theta axis? The main obvious wave has an ampli-

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tude of $\theta = \pm 150$ K at $z = 20$ km, and seems to have a vertical wavelength of 3-4 km. In Fig 3, you apply a band-pass filter of 3-5 km, and only get a wave with an amplitude of $\theta = \pm 10$ K. something is wrong. Either the axis on Fig 2a seems wrong, or the band pass filter seems wrong. It seems unlikely that the amplitude would reduce by 15 from the band-pass filter.

Interactive comment on Atmos. Chem. Phys. Discuss., 11, 4487, 2011.

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