Atmos. Chem. Phys. Discuss., 11, C8862–C8863, 2011
www.atmos-chem-phys-discuss.net/11/C8862/2011/

Atmospheric Chemistry and Physics Discussions

Interactive comment on "Observation of a mesospheric front in a dual duct over King George Island, Antarctica" *by* J. V. Bageston et al.

J. V. Bageston et al.

bageston@gmail.com

Received and published: 12 September 2011

1) The referee remains unconvinced that the reported event is a bore.

REPLY: After careful analysis on the event, we found that the event did not maintain its sharp front (seen through ortogonal cut made in different images). Now the new Figure 1 have a good quality, and new discussions regarding this figure are in the updated version of the paper. Then through these latter analysis we agree that this event is not a bore, but a mesospheric front that can not be qualified as a bore with the presented airglow data.

1.1) Referee's question: Why is this Antarctic event a bore?

REPLY: According to our final analyses we did not qualify the event as a bore, but as

a mesospheric front with crests added in the wave train without a clear discontinuity across the front (the front was not steppen). Despite the bore characteristics given by Dewan and Picard (1998), this event did not present just one of the required characteristics for bore event, i.e., a clear sharp front, that is likely due to the poor quality of the original airglow images.

2) "Perhaps they could do a search to see if the presence of a duct in SABER and MF radar data is unusual or not. That would help determine the significance of the duct."

REPLY: The presence of ducts in SABER temperature data and winds observed with MF or meteor radars at high southern latitudes was not assessed so far. Then, we can not answer the question about the frequency of these ducts since we did not find any paper reporting such kind of ducts for high Antarctic latitudes.

Interactive comment on Atmos. Chem. Phys. Discuss., 11, 16185, 2011.