

Interactive comment on “An unusual stratospheric ozone decrease linked to isentropic air-mass transport as observed over Irene (25.5° S, 28.1° E) in mid-May 2002” by N. Semane et al.

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Received and published: 20 March 2006

1- According to the ref # 3 comment, our study focused only on the minima of O₃ of May 2002 whereas there is another situation of equivalent minimum in the total O₃ for the studied site (Fig. 1). We agree that Fig. 1 of the paper shows some low values of total ozone for a year different from 2002 as pointed out by ref#3. We confirm that these low values correspond to May 2004: 1st May 2004 (226.9DU), 2nd May 2004 (224DU) and 3rd May 2004 (228.5 DU). For these periods we don't have any sounding for Irene. The only soundings available for Irene in May 2004 were performed on 12 and 26 May. Nevertheless, our study is centred over 2002 because of the exceptional dynamic activity in the HS: major stratospheric warming. Moreover, the reduction in

ozone in May 2002 is a persistent situation: the anomaly appeared during several days, which was not the case for 2004. This last prominent character of the May 2002 O₃ minimum has been already mentioned in the paper.

2-Concerning the effective diffusivity plot, we have taken into account the ref#3 recommendations and removed the figure 5 showing the isentropic mixing. In fact, MIMOSA APV-maps and Eliassen-Palm flux (E-P) snapshots are enough to illustrate transport and highlight the increase in the dynamic activity over the subtropics during mid-May 2002.

Interactive comment on Atmos. Chem. Phys. Discuss., 5, 12617, 2005.

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