**Atmospheric
Chemistry
and Physics
Discussions**

Interactive comment on "Measurement-based modeling of bromine chemistry at the Dead Seaboundary layer – Part 2: The influence of NO$_2$ on bromine chemistryat mid-latitude areas" *by* E. Tas et al.

Anonymous Referee #2

Received and published: 5 June 2008

General Comments: Tas et al. have produced an interesting paper on the simulation of the influence of NO2 on Br and BrO concentration profiles and their average production rates. They found that higher levels of NO2 lead to higher daily average concentrations of BrOX due to increases in the rate of the heterogeneous decomposition of BrONO2. They also found that the ratio [Br]/[BrO] had an important effect on the relative reaction mechanisms of the NO2 on Br and BrO.

Scientific Comments: The paper has two weaknesses that should be corrected.

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Although the model evaluation may have been presented elsewhere it should be summarized in more detail in this manuscript. It is difficult to comment on the conclusions of present paper without knowing the original model performance.

The authors also state that they have information on the integrated reaction rates as they discussed in Tas et al. (2006). First this technique is called "counter-species" and originally developed by Leone and Seinfeld (1985). Tas et al. should cite this paper. More importantly they have much important information from the counter-species that should be presented in support of their arguments.

Attention to both of these issues would greatly strengthen the paper.

Specific Comments: Please add the following citation Leone, J.A. and J.H. Seinfeld, Comparative analysis of chemical reaction mechanisms for photochemical smog, Atmos. Environ., 19, 437 - 464, 1985.

Interactive comment on Atmos. Chem. Phys. Discuss., 8, 7725, 2008.

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