

Interactive  
Comment

## ***Interactive comment on* “Evidence for heterogeneous chlorine activation in the tropical UTLS” by M. von Hobe et al.**

**M. von Hobe et al.**

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Received and published: 18 November 2010

Inorganic species (like sea salt) as well as organic short-lived species from the marine boundary layer may contribute to the  $\text{Cl}_y$  budget within the observed air masses. We will expand the discussion of MBL → UTLS transport and the potential influence on our observations.

HAGAR CFC-11 and CFC-12 measurements are indeed available for most of the flights during both campaigns, and we will modify the inaccurate wording on the availability of organic chlorine data. Nevertheless, we believe that these long lived gases are not the most suitable proxy to estimate  $\text{Cl}_y$  in the young air found in the tropical UTLS. A more

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elaborate discussion including some recent references will be included in the revised manuscript.

We chose not to add a 3rd panel to Figure 1 showing the  $\text{Cl}_y/\text{O}_3$  relation. In our opinion, this combination of the  $\text{HCl}/\text{O}_3$  and  $\text{Cl}_y/\text{HCl}$  correlations would neither confer any additional information nor significantly aid the visualization of the overall relationship (it would essentially look like the first panel with the y-axis replaced by  $\text{Cl}_y$  and hence a steeper slope in absolute numbers).

The observation of elevated night-time ClO will be discussed in more detail and quantitatively (cf. response to Ross Salawitch's review).

All suggested minor points and technical corrections will be addressed in the revised manuscript except for the color scale in Figure 4. The difficulty to distinguish points in Figure 4 is not a result of the choice of color scale but rather of a large number of points with a very similar (and very low) activation ratio. These similar values show up in yellow, while the fewer points with higher activation ratios stick out to a varying degree. Even with a log scale, the yellow points do not become very different.

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Interactive comment on Atmos. Chem. Phys. Discuss., 10, 18063, 2010.

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