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Comment

## ***Interactive comment on “The tropospheric processing of acidic gases and hydrogen sulphide in volcanic gas plumes as inferred from field and model investigations” by A. Aiuppa et al.***

**A. Aiuppa et al.**

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Reviewer 1 suggests that the disagreement between modeled and measured H<sub>2</sub>S concentrations in the presence of chlorine chemistry might be reduced if we considered loss reactions for Cl atoms by organics. In the model "standard" loss of Cl by VOC is included, however the VOC concentrations are assumed to be fairly small in the background air. We are not aware of indications for strongly elevated VOC concentrations in volcanic volatiles (previous measurements by the authors failed to detect any VOC enrichment in the plume compared to background air), so we don't think that these reactions are capable of reducing the disagreement between model and measurements. Also, note that the model UNDERestimates measured ClO columns by about a factor of 40, so that a reduction in Cl would have to be accompanied by a VERY strong shift

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in the Cl:ClO ratio.

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Interactive comment on *Atmos. Chem. Phys. Discuss.*, 6, 11653, 2006.

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