**Atmospheric
Chemistry
and Physics
Discussions**

Interactive comment on "Evaluated kinetic and photochemical data for atmospheric chemistry: Volume III – reactions of inorganic halogens" *by* R. Atkinson et al.

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The data tables compiled by Atkinson et al. are an invaluable tool for the modeling community. Here I would like to offer some suggestions that will facilitate using this large data set:

- I find it rather cumbersome to gather all the pieces of information necessary to construct a third-order rate coefficient. There are no preferred values for the overall rate coefficient. Instead, the low-pressure and high-pressure data are listed separately in the appendices. To combine the low-pressure and high-pressure data, it is necessary to carefully read the text and the equations that are spread

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over pages 2297-2299. As an alternative, I suggest to list all relevant equations together in one block:

$$k_0(T) = k_0^{300} \times \left(\frac{300K}{T}\right)^n \tag{1}$$

$$k_\infty(T) = k_\infty^{300} \times \left(\frac{300K}{T}\right)^m \tag{2}$$

$$N = 0.75 - 1.27 \times \log_{10}(F_c) \tag{3}$$

$$k_{3rd} = \frac{k_0(T)k_\infty(T)}{k_0(T) + k_\infty(T)} \times F_c^{\left(\frac{1}{1+(\log_{10}(k_0(T)/k_\infty(T))/N)^2}\right)} \tag{4}$$

Now, each third-order rate coefficient can be defined by listing the 5 values of k_0^{300}, n, k_∞^{300}, m, and F_c.

- An additional reason that makes it difficult to refer to specific equations in the text is that they currently are not numbered at all. To distiguish them from chemical reactions, I suggest to use (1), (2), (3) etc. for mathematical equations and (R1), (R2), (R3) etc. chemical reactions.

- When implementing the rate coefficients from this paper into an atmospheric chemistry model, it is necessary to type in the numbers manually which always includes the risk of creating typing errors. Therefore I suggest to add an electronic supplement to the paper containing all rate coefficients defined as Fortran90 code.

Interactive comment on Atmos. Chem. Phys. Discuss., 6, 2281, 2006.

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