Title: A new model of meteoric calcium in the mesosphere and lower thermosphere

Author(s): John M. C. Plane et al.

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Response to the reviewers' comments

We thank both reviewers for their very positive reviews of the paper. The points raised by Reviewer #2 are listed below in italics, with our response in normal type.

P1, L19-20, and P11, L16-17: These sentences do not state which ablation is larger, Ca or Na. It's better to state that explicitly, although it is mentioned in P3, L4. The sentence can be simply changed to "… 1 order of magnitude larger than Na"

The sentence in the abstract (P1) has been changed to: "A new meteoric input function for Ca and Na, derived using a chemical ablation model that has been tested experimentally with a Meteoric Ablation Simulator, shows that Ca ablates almost 1 order of magnitude less efficiently than Na."

The sentence on P11 has been changed to: "Ca ablates almost 1 order of magnitude less efficiently than Na".

P4, L16-17: Please explain why 100 times increase is used instead of some other factor.

This is now explained on P4, L18: "The reason for increasing the rate coefficient by a factor of ~100 is that the Ca reservoir species can also polymerize with other (i.e., non-Ca containing) meteoric molecules (e.g., $NaHCO_3$, FeOH, and $Mg(OH)_2$), and the dimerization rate coefficient needs to be increased to account for this since Ca ablates in a large excess of these other metals: the elemental ablation ratio of Ca atoms to the sum of Na, Fe, Mg, Si, Al and K atoms is 0.01 (Carrillo-Sánchez et al., 2016)."

P5, L18: 200 km is a closer to the WACCM resolution at 1.9 degrees.

Agreed – now changed.

P11, L2: It's simpler to just use '11.0' instead of '11.0:1'

Agreed – now changed.