

Interactive comment on “Multiple-sulfur isotope effects during photolysis of carbonyl sulfide” by Y. Lin et al.

Y. Lin et al.

yinglin@nju.edu.cn

Received and published: 11 August 2011

Response to Dr. Danielache:

Thank you for your comments.

Specific comments:

> The use of scale parameters for theoretically calculated frequencies is common place yet I haven't seen any study that address the question if these parameters as they are can be applied to isotopologues, in my understanding this remains an open question.

Reply: The scaling factor for estimating vibrational frequencies of isotopologues has been discussed, for example, by Schauble (2004). One could test different scaling

C7658

factors to see sensitivity but that usually has very minor effect. Such a sensitivity test seems a bit beyond the scope of this study.

> How the photodissociation of Sn species is approached?

Reply: Please see separate comment (to Dr. Johnson) about Sn chemistry. Overall, S₂ recombination (S₂+S₂→S₄) is much faster than the S₂ photolysis.

Reference:

Schauble, E. A.: Applying stable isotope fractionation theory to new systems, in Rev. Mineral. Geochem., 55, 65-111, 2004.

Interactive comment on Atmos. Chem. Phys. Discuss., 11, 14233, 2011.