

Our response to Bogdan's comments are in red

In 2-nd paragraph of Introduction, the authors reviewed previous works which dealt with enhanced relative humidity with respect to ice observed outside and inside upper tropospheric cirrus ice clouds. The authors did not reference the following two works which also dealt with upper tropospheric cirrus ice clouds.

1. Bogdan, A. and M. J. Molina, 2009, "Why does large relative humidity with respect to ice persist in cirrus ice clouds?" J. Phys. Chem. A, 113, 14123-14130.

2. Bogdan, A. and M. J. Molina, 2010, "Aqueous Aerosol May Build up an Elevated Upper Tropospheric Ice Supersaturation and Form Mixed-Phase Particles after Freezing." J. Phys. Chem. A, 114, 2821-2829.

We have added the following reference to the papers by Bogdan et al. in the introduction together with the other potential explanations for high in-cloud RH: "It has also been proposed that inorganic acids may form coatings on frozen solution droplets that could slow the rate of ice particle growth {Bogdan, 2009 #528; Bogdan, 2010 #527}".

It is interesting, whether the authors did not notice these works or intentionally did not reference them because they present alternative explanation?

We thank the commenter for rightly reminding us of their work and have added a reference to the papers in the text. However, we strongly refute the suggestion that references were intentionally left out because they present an explanation other than our own. The suggestion is particularly ridiculous in this case considering that we had already referred to five other possible mechanisms in the text.