

***Interactive comment on* “Detection of reactive nitrogen containing particles in the tropopause region – evidence for a tropical nitric acid trihydrate (NAT) belt” by C. Voigt et al.**

Anonymous Referee #2

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The authors present a clear and persuasive description of nitric acid trihydrate (NAT) particle observations in the tropical tropopause layer above West Africa. This is the first report of NAT particles in the TTL, and warrants publication in ACP. The authors investigate the implications of NAT in the TTL, using trajectory and GCM simulations. While it is always difficult to completely reconcile observations which have been influenced by small- and meso-scale processes with modelling that uses the large-scale atmospheric flow, the additional sections (6 and 8) do add to the paper. I have no substantive issues to raise. I would only suggest that the authors consider adding a sentence to abstract and/or conclusions indicating what, if any, implications there are for climate or general atmospheric chemistry modelling. I list a few minor remarks, below.

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Minor remarks

Abstract: I think the chemical formula for NAT should have a dot, not a cross, between the formulae for nitric acid and water.

P14147, line 5: I wonder if 'makes detection from space difficult' is a better phrase than 'inhibits...' in this context?

P14150, line 20: 'thick' not 'think'

P14155, line 3: should 'increasing' be decreasing?

P14155, line 12: 'sampled at' is repeated

P14156, line : '...regions was...'? Grammar?

Interactive comment on Atmos. Chem. Phys. Discuss., 8, 14145, 2008.

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