

Interactive comment on “Parameterization of the nitric acid effect on CCN activation” by S. Romakkaniemi et al.

Anonymous Referee #2

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General Comments: The authors examine the effect of nitric acid on cloud droplet formation. Previous studies have shown that cloud droplet formation depends on the physical and chemical properties of atmospheric aerosols and on atmospheric conditions as well as the presence of nitric acid. Several parameterizations have been developed recently to address these effects but none take into account the role of nitric acid. The authors have been successful in developing a new parameterization that includes the effect of nitric acid. However, this parameterization is basically an empirical based on results of numerical simulations of the governing equations under a variety of assumed conditions. Its derivation is neither based on analytical formulation nor approximate analytical calculations. Thus, it's applicability to the entire range of

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atmospheric conditions is questionable.

Specific Comments: The paper is well written but did not show the derivation of the parametric equation. The paper is within the scope of ACP. Though it does not present novel concepts, it present important and useful development in cloud modeling. The paper used valid scientific methods and assumptions. The results are sufficient to support the authors' conclusions. The title clearly reflects the contents of the paper and the abstract provides a concise and complete summary. Equations, Figures, and tables are clear and well presented.

Technical Corrections: None.

Interactive comment on Atmos. Chem. Phys. Discuss., 4, 7859, 2004.

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