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## ***Interactive comment on “A coupled observation – modeling approach for studying activation kinetics from measurements of CCN activity” by T. Raatikainen et al.***

### **Anonymous Referee #1**

Received and published: 16 March 2012

This paper presents a modeling approach to analyze CCN data for droplet growth kinetics. The model is applied to a field-collected data set and tested in various versions to determine important parameters and optimize computation time. The most significant conclusion of the paper is that water vapor depletion occurs readily in experimentally-collected data but that it can be accurately accounted for using the presented model.

The paper is extremely well-written and easy to follow. The key concepts are explained and well-referenced. There were no obvious errors or ambiguities observed by this reviewer.

Technical comments: P1830, L1 - Sample flow is assumed at 30% RH but could be (by

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the author's own comments) much lower or higher. Realistically, this could vary from 2% or less up to 100%. It would be useful for the author to comment on if/how this wide variability in sample flow rate would affect the final results. Much time is spent discussing the impacts of sheath RH so a few sentences on sample RH would help complete the analysis.

P1831, L25 - Figure 12 is referenced here, near the beginning of the manuscript. It seems this figure should be moved to the beginning (Figure 2 perhaps) so that figures are referenced in the order in which they appear.

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Interactive comment on Atmos. Chem. Phys. Discuss., 12, 1821, 2012.

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