

The roles of sulfuric acid and organic condensable vapors in the growth of newly formed particles in the rural environment

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The new particle formation events which constitute an important source of CCN have been observed in the various environments. Until now, new particle formation and growth are not understood satisfactorily. An intensive field campaign including the measurements of particle number size distributions, sulfuric acid, and VOCs was performed in May, 2008 at a rural site, Melpitz, Germany within the EUCAARI project. During the measuring period, several new particle formation events were observed. My work is to estimate the contribution of sulfuric acid to the particle growth based on these measurements. The contributions of other species (the most likely organic condensable vapors) will also be estimated by comparison of experimental growth rate with sulfuric acid-derived growth rate. The relevant papers are Birmili et al. (2003) and Laaksonen et al. (2008).

Birmili W, Berresheim H, Plass-Dulmer C, et al., (2003). The Hohenpeissenberg aerosol formation experiment (HAFEX): a long-term study including size-resolved aerosol, H<sub>2</sub>SO<sub>4</sub>, OH, and monoterpenes measurements. Source: Atmospheric Chemistry and Physics. Volume: 3 Pages: 361-376.

Laaksonen A., Kulmala M., O'Dowd C. D., et al., (2008). The role of VOC oxidation products in continental new particle formation. Atmospheric Chemistry and Physics. Volume: 8 Pages: 2657-2665.