

Interactive comment on “Hygroscopic growth of sub-micrometer and one-micrometer aerosol particles measured during ACE-Asia” by A. Massling et al.

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This is an interesting piece of work worthy of publication in ACP. Dr Gysel has covered most of my concerns, but I do have a couple of additional comments.

The first one concerns backtrajectories. Typically, the horizontal uncertainty is about 30% of the backtrajectory length. Is this the case here? How sure are you that during period 4 the air was actually influenced by the volcano? Another concern is the backtrajectory height. The air parcels flowing along the trajectory will pick up emissions much more effectively in the boundary layer than in the free troposphere. It is indicated that during period 3 the air did not spend very many hours over Japan. What was the

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backtrajectory height over Japan?

A minor comment on Figs. 3-6 and 8, especially Fig. 6. It is indicated that one of the particle types is sea-salt, however, in the text it is argued that during period 4 the most hygroscopic particles are probably sulfate. This is inconsistent and should be fixed (e.g. label these particles as "sea-salt or sulfate" in Fig. 6). BTW, doesn't the fact that these very hygroscopic particles are seen in all size classes during period 4 but only in the largest size classes during other periods give an additional argument for sulfate instead of sea-salt during period 4?

Interactive comment on Atmos. Chem. Phys. Discuss., 6, 12267, 2006.

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