Atmospheric
Chemistry
and Physics
Open Access
Discussions

EGU

Interactive
comment

Interactive comment on "The Rate of Equilibration of Viscous Aerosol Particles" *by* S. O'Meara et al.

S. O'Meara et al.

simon.omeara@postgrad.manchester.ac.uk

Received and published: 4 April 2016

Point 4 of reviewer 1, regarding how non-ideality was incorporated into the diffusion model was discussed in our first response, however we have made further modifications. We present these below, with the original reviewer comment given first beside the marker 4), our response given beside the markers AC) and the changes to the paper given in quotation marks.

4) End of section 2.3. At this location, please give more details on the system already presented by Zobrist et al. (2011), so the reader has a better idea of the type of systems the results apply to.

AC) pp.8 line 20 changed to be more informative of how non-ideality accounted for:

" For actual inferences one would preferably have good knowledge of the system's deviation from ideality. In an attempt to replicate a real system, we therefore use the

estimation for water activity and density as a function of sucrose weight fraction pre-sented in Zobrist et al. (2011). The initial and surface shell water activity were set equal to the initial and current gas-phase saturation ratio of water (the saturation ratio changed with time), with the accommodation coefficient of water assumed to be one."

AC) and pp. 10 line 24 now reads:

" We have used the water activity and density dependence on sucrose weight fraction as described in Zobrist et al. (2011) for the sucrose-water system in an attempt to replicate a non-ideal system. The ETH model was employed, though the results above indicate that KM-GAP and Fi-PaD would produce identical profiles."

Interactive comment on Atmos. Chem. Phys. Discuss., doi:10.5194/acp-2015-1019, 2016.