

[Interactive
Comment](#)

***Interactive comment on* “Technical Note: Estimating aerosol effects on cloud radiative forcing” by S. J. Ghan**

J. Quaas (Referee)

johannes.quaas@uni-leipzig.de

Received and published: 18 July 2013

The refined way to compute the aerosol-cloud radiative effect Steve Ghan proposes is a useful one and should be considered seriously by the modelling community. I believe, however, that some specifications and discussions are lacking in his current description.

1. “Forcing” is a delicate term. I believe the forthcoming IPCC report includes an attempt to define a new terminology, or else the cited paper by Lohmann et al. (Atmos. Chem. Phys. 2010) has some discussion on the term. I understand the author defines forcing as difference in top-of-atmosphere net radiation between two simulations with prescribed climatological sea-surface temperature distribu-

C4935

[Full Screen / Esc](#)

[Printer-friendly Version](#)

[Interactive Discussion](#)

[Discussion Paper](#)



- tions, but this should be clarified.
2. The “clean” radiation computations involve no-aerosol atmospheres. For cloud droplet and ice crystal number concentrations, a “clean” equivalent is impossible. How are these computed in the “ F_{clean} ” computed?
 3. The clear-sky water vapour contribution merits discussion (see, e.g., Sohn et al., Atmos. Chem. Phys. 2010).

Interactive comment on Atmos. Chem. Phys. Discuss., 13, 18771, 2013.

[Full Screen / Esc](#)[Printer-friendly Version](#)[Interactive Discussion](#)[Discussion Paper](#)