

Interactive comment on “A simple model for cloud radiative forcing” by T. Corti and T. Peter

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As the authors point out, their simple CRF model may serve as a tool in education. It would be useful to point out the difference between Eq.(13) (the SW CRF) and Twomey’s classic textbook estimate [S. Twomey, Atmospheric Aerosols, Development in Atmos. Sci. 7, Elsevier, 2nd edition, 1977, Ch.12.3, p.281]. Twomey’s expression of the SW CRF for conservative scattering reads (apart from solar flux parameters)

$$r + \frac{(1-r)^2 A}{1-rA} - A$$

with the reflectance r and surface albedo A . Which assumptions are necessary to reconcile Twomey’s estimate with Eq.(13)?

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C833