Atmos. Meas. Tech. Discuss.,
doi:10.5194/amt-2019-236-RC1, 2019

Atmospheric Measurement Techniques Discussions

Interactive comment on "An experimental study on light scattering matrices for Chinese loess dust with different particle size distributions" *by* Jia Liu et al.

Anonymous Referee #1

Received and published: 10 August 2019

Experimental studies like this one are still rare and should be encouraged. This is a useful paper and can be published largely as is. I would only suggest to expand the motivation for this study in the introduction by pointing out that satellite retrievals of dust-aerosol characteristics such as, e.g., the optical thickness are strongly affected by particle nonsphericity (e.g., [1]), and so reliable knowledge of the phase function (or, more generally, the scattering matrix) for real dust aerosols is essential.

[1] Mishchenko, M. I., I. V. Geogdzhayev, L. Liu, J. A. Ogren, A. A. Lacis, W. B. Rossow, J. W. Hovenier, H. Volten, and O. Munoz, 2003: Aerosol retrievals from AVHRR radiances: effects of particle nonsphericity and absorption and an updated long-term

global climatology of aerosol properties. J. Quant. Spectrosc. Radiat. Transfer 79/80, 953-972.

Interactive comment on Atmos. Meas. Tech. Discuss., doi:10.5194/amt-2019-236, 2019.