

***Interactive comment on* “Direct observations of the atmospheric processing of Asian mineral dust” by R. C. Sullivan et al.**

Y. Rudich (Editor)

yinon.rudich@weizmann.ac.il

Received and published: 22 August 2006

Two comments: 1. With regards to the possibility that some of the SO₄ is associated with gypsum, please note that Falkovich et al (Falkovich, et al., 2001), also concluded that SO₄ can be associated with the dust already at the source (but not necessarily as gypsum). Some of the sources for sulfate can be either deposition by rain, wet soil processes or runoff into low areas which later on serve as the source of dust. 2. The indirect effect of dust through modification of cloud properties (discussed on page 2 of the article) has been shown in several publications that should be cited (Kaufman, et al., 2005; Koren, et al., 2005; Mahowald and Kiehl, 2003; Rosenfeld, et al., 2001).

Falkovich, A., Ganor, E., Levin, Z., Formenti, P., and Rudich, Y.: Chemical and mineralogical analysis of individual mineral dust particles, J. Geophys. Res., 106, 18029

-18036, 2001.

Kaufman, Y. J., Koren, I., Remer, L. A., Rosenfeld, D., and Rudich, Y.: The effect of smoke, dust, and pollution aerosol on shallow cloud development over the Atlantic ocean, Proc. Natl. Acad. Sci. USA, 102, 11207-11212, 2005.

Koren, I., Kaufman, Y. J., Rosenfeld, D., Remer, L. A., and Rudich, Y.: Aerosol invigoration and restructuring of atlantic convective clouds, Geophys. Res. Lett., 32, 2005.

Mahowald, N. M., and Kiehl, L. M.: Mineral aerosol and cloud interactions, Geophys. Res. Lett., 30, 2003.

Rosenfeld, D., Rudich, Y., and Lahav, R.: Desert dust suppressing precipitation: A possible desertification feedback loop, Proc. Natl. Acad. Sci. USA, 98, 5975-5980, 2001.

Interactive comment on Atmos. Chem. Phys. Discuss., 6, 4109, 2006.

Full Screen / Esc

Printer-friendly Version

Interactive Discussion

Discussion Paper