



Magnetic properties of airborne dust particles on rainy dust storms

Raegyung Ha and Yongjae Yu

Department of Astronomy, Space Science, and Geology, Chungnam National University, Daejeon, Korea
(raegyung@cnu.ac.kr)

Airborne dust particles were separated from 136 rainy or snowy dust storms collected in Daejeon, Korea from February 2009 to February 2013. There is a trend that dust density increased with the amount of rainfalls. However, heavy rainfalls yield a rather consistent dust density of hundred micrograms per cubic meter. A stepwise isothermal remanent magnetization (IRM) acquisition and its component analysis showed two coercivity fractions: softer component (5-40 mT) and harder component (60-200 mT). We found double peaks on the temperature dependence of room-temperature saturation IRM. It is possible that relatively larger magnetite interior is responsible for the softer coercivity fraction which is compositionally closer to pure magnetite. On the other hand, harder coercivity fraction reflects the finer aggregates of Carbon-coated shells that are more oxidized than the pure interior.