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Scattering of Dust Particles near the Moon's Surface by a Plane Wave

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Lunar dust particle is a very important component of the lunar environment, the role of moon dust particles must be considered when laser communication is carried out on the moon. Thus, scattering characteristics of lunar dust need to be deeply studied [1-9]. Based on the Mie theory, the scattering phase function of the lunar dust particles is calculated. The computed results show the scattering phase function is large with the increment of laser wavelength, and the forward scattering of the lunar dust particles is stronger than that of the backscattering. The scattering characteristics of lunar dust particles at different laser wavelengths are shown in Figure 1. In addition, the polarization properties of lunar dust particles and other optical properties are also can be obtained.

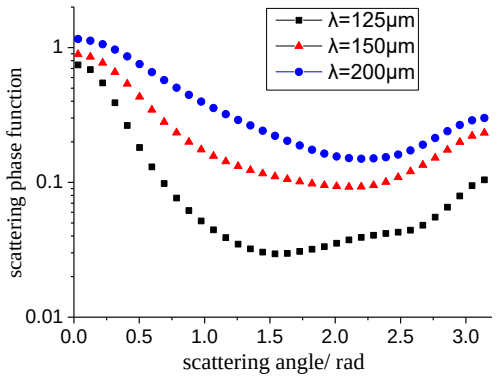

Fig 1. Scattering phase functions of lunar dust particles with different laser wavelength

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