Effects of multiple scattering on the retrieval of cloud optical thickness using CALIPSO data

The multiple scattering factor is a critical parameter in the retrieval of cloud optical thickness (COT) from CALIPSO data. The value of the multiple scattering factor is simulated for clouds with various properties (physical depth, particle size, extinction, etc.). The simulation results provide useful information about the appropriate multiple scattering factor that should be used in the CALIPSO COT retrieval. The usage of an adjusted multiple scattering factor in the CALIPSO retrieval is found to partially resolve the inconsistencies between collocated COT retrievals from CALIPSO and MODIS data.