



Development of the MATLAB version of DISORT for atmospheric research purposes

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A MATLAB version of discrete ordinate method radiative transfer code was developed for researchers who are familiar with the MATLAB language. The problem formulation and a solution method for the radiative transfer equation are identical to benchmark code, DISORT (Stamnes et al., 1988), except eigen vector and eigen value solver. This code used QZ method rather than QR method which is provide by MATLAB library. Results for a 5-layer test atmosphere with two scatterers were shown and intensities were validated against benchmark discrete ordinate results from DISORT and LIDORT (Stamnes et al., 1988; Spurr et al., 2001). Sensitivity tests for several atmospheric aerosol species including mineral dust, water soluble aerosol, and black carbon were also performed in order to distinguish the optical properties of different kinds of aerosols.