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Remote sensing and atmosphere

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The intensities observed along nadir at the top of atmosphere as a function of solar zenith angle for λ =0.55-micron, haze o refractive index m=1.50-0.031 and aerosols distributed over 0.03 to 10 micron range. As the solar zenith angle increases, the increase in effective atmospheric path leads to decrease in intensity approaching to zero a solar zenith of 90. The rate of decrease of intensity with solar zenith angle is more for higher values of reflectivity. The variation with the solar zenith angle at the top of the atmosphere of upward travelling radiance for each of the lands at bands as seen at an altitude of 45.538 for a surface reflectivity of 0.2. This uses an atmospheric model based on the vertical distribution and content of ozone, aerosol and water vapour for an average mid-latitude summer. Atmosphere, since the solar flux is highest in the spectral interval 0.5-0.6 micron, the upward radiance received by that band is higher than any other band. Also as the solar zenith angle increases, the upward radiance diminishes as expected because of the added path length through which the solar flux must pass.

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