

光谱学与光谱分析

Spectral Reflectance Characteristics of Different Snow and Snow-Covered Land Surface Objects and Mixed Spectrum Fitting

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摘要 The field spectroradiometer was used to measure spectra of different snow and snow-covered land surface objects in Beijing area. The result showed that for a pure snow spectrum, the snow reflectance peaks appeared from visible to 800 nm band locations; there was an obvious absorption valley of snow spectrum near 1 030 nm wavelength. Compared with fresh snow, the reflection peaks of the old snow and melting snow showed different degrees of decline in the ranges of 300~1 300, 1 700~1 800 and 2 200~2 300 nm, the lowest was from the compacted snow and frozen ice. For the vegetation and snow mixed spectral characteristics, it was indicated that the spectral reflectance increased for the snow-covered land types (including pine leaf with snow and pine leaf on snow background), due to the influence of snow background in the range of 350~1 300 nm. However, the spectrum reflectance of mixed pixel remained a vegetation spectral characteristic. In the end, based on the spectrum analysis of snow, vegetation, and mixed snow/vegetation pixels, the mixed spectral fitting equations were established, and the results showed that there was good correlation between spectral curves by simulation fitting and observed ones (correlation coefficient $R^2=0.950\ 9$).

关键词 [Snow](#) [Snow-covered land surface object](#) [Spectral characteristics](#) [Spectral fitting](#)

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