

The Composite Analysis of Surface Albedo on the Western Tibetan Plateau

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Abstract: BY using the continuous observational data of air radiation and soil from two sites of automatic weather station (AWS) at Shiquanhe and Gaze on the western Tibetan Plateau in the period from September 1997 to December 1998, the hourly surface albedo is computed. Furthermore the daily mean of surface albedo and the monthly mean are computed and analyzed. On the basis of the calculation of the solar elevation angle which is the most significant factor to the surface albedo, the stress of this paper focuses on analyzing the diurnal variations of surface albedo by the method of composite analysis. The result shows that the value of surface albedo is reduced in summer with rain season and obviously increased in winter with dry season (the mean value of the surface albedo exceed 0.5 in December). The diurnal variation of surface albedo exhibits "U" shape. The maximum of surface albedo appears at sunrise and sunset and its minimum appears at noon, the variation trend between surface albedo and solar elevation angle is reverse. The results are helpful to acquire a deep understanding of the variational characteristics of surface albedo in this area.

Key words: Tibetan Plateau; surface albedo; variation; composite analysis; solar elevation angle

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