

Distributed Modeling of Direct Solar Radiation of Rugged Terrain over Yangtze Rive Basin

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Solar radiation is the most important energy source on earth and direct solar radiation is one of the most crucial weights. Its time and space distribution of high precision on earth restricts the climate system's form and evolvment and precision of hydrology simulation, also is the most important gene in the climate system's form and evolvment. DEM (digital elevation model) data as a representation of the complex terrain and multiplicity condition produces a series of topographic factors such as slope and aspect; etc. Based on DEM data and meteorological observations, a distributed model for calculating direct solar radiation over rugged terrains is developed for Yangtze Rive. Using the distributed model this paper comes true fix quantify simulation of space distributing and space visualization, and deeply analyzes variation disciplinarian of direct solar radiation due to locality and terrain The results suggest that the direct solar radiation quantity over mountainous area for Yangtze Rive Basin influenced by local topographic factors has a clear spatial difference and subsists sunny slope(or southern slope) obviously larger than shady slope(or northern slope)

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