RSHS18-91
Remote Sensing and Hydrology Symposium (ICRS-IAHS)

Application of RS and Radar in the Precipitation Interpolation

Cunwen Niu (1), Yangwen Jia (1), Yanxia Wu (1,2)

(1) China Institute of Water Resources and Hydropower Research,Beijing,100038,China, (2) North China University of Water Resources and Electric Power,Zhengzhou,450046,China

Precipitation is one of the most important driving factors in the "natural-social" dualistic water cycle of the basin. It plays a key role in the formation and transformation of runoff. Accurate spatial and temporal distribution information about Precipitation can be used to provide a scientific basis for predicting natural disasters, protecting the ecological environment and production. In recent years, with the increasing level of urbanization, the underlying surface changes dramatically, the rain island effect is remarkable, the extreme events are frequent, and the spatial difference of rainfall is more significant. A great deal of literature has studied the spatial and temporal distribution characteristics of rainfall. For example, the methods of distance inverse ratio weighting, multivariate linear regression, Kriging interpolation and spline functions are used to study different regions. By adding the terrain and other underlying factors, scholars has compared the advantages and disadvantages and analyzed the applicability about different methods, which has achieved good results. There are more than 20,000 rainfall stations in China. Although the total number is large, the density of different regions is obviously different. The control area of a single station is about 10km2 in the eastern developed area. While the rainfall in the western region, especially in the mountainous area, is quite different. But Its control area of a single station reaches hundreds or even thousands of square kilometers. This phenomenon presents a great challenge to the construction of the national distributed water cycle model. Although the measurement data of remote sensing and radar are slightly less accurate in absolute value, the relative value of spatial distribution is relatively accurate. This paper discusses how to accurately describe the spatial distribution of precipitation in a large area through the combination of hydrological meteorological site data, remote sensing and radar data, and has achieved good results.