



Optimal Spatial Interpolation Method for precipitation data in China

Chen Yating

Beijing Normal University, China (201621490021@mail.bnu.edu.cn)

The spatial distribution of precipitation plays a key role for water resources management and flood & drought prediction. In this study, based on precipitation data (1981-2010) and DEM data from 2160 meteorological stations of China, we will produce a nice spatial distribution of precipitation of China by using eight interpolation methods, including Inverse Distance Weight method, Radial Basis Function method, Global Polynomial Interpolation method, Local Polynomial Interpolation method, Ordinary Kriging method, Simple Kriging method, Universal Kriging method and Empirical Bayesian Kriging method. By using cross-validation, we find that (a) The Empirical Bayesian Kriging method is optimal for the whole China. (b) For different land types, the Radial Basis Function method is optimal for plain areas, while the Empirical Bayesian Kriging method is optimal for mountainous areas. (c) The optimal methods for Yellow River basin, Yangtze river basin and Pearl River basin are Universal Kriging method, Ordinary Kriging method, Empirical Bayesian Kriging method, respectively.