工程与应用

基于Matlab与VB混合编程的流域降水预报系统

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摘要　　利用研究区获得的水文观测资料，采用模块开发和系统集成方式，研制了研究区流域降水预报系统。介绍了系统的体系结构、主要功能、运行情况及开发的关键技术。叙述了流域降水预报的各种预报方法，并建立了基于遗传算法的降水预报神经网络模型（GA–BP网络模型）。结果表明，GA–BP网络是一种精度较高的降水预报模型，提高预测精度，增长有效预见期。该系统能根据流域观测数据、高空数据、卫星云图、数值产品等数据，实现不同数据源的信息处理和不同时效的降水预报制作，为洪水预警预报和防洪决策服务。

关键词　　滨江流域　GA-BP网络　降水预报

分类号

River catchment precipitation forecast system with Matlab and VB

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Abstract

Based on the hydrological observatory data in the study zone and adopted the development of the module and system integration way，it has developed GPS Precipitation Forecast System for River Catchment.The structure，function，running，and key technology of the system are introduced，respectively.Every method of recipitation forecast is simply depicted.An ANN model joined with GA for river catchment precipitation forecast has been set up.The result shows that the model of GA-BP can enhance the forecast precision，and its effectiveness and the reliability has been proved.The system can realize the information processing of different data sources and the precipitation forecast of the result is made by the data of river catchment high altitude，satellite cloud atlas etc.It can service for prewarning predicts and prevent flood for the flood.

Key words　Binjiang river catchment　GA-BP network　precipitation forecast

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