

著作类成果

“3S”技术水利应用指南

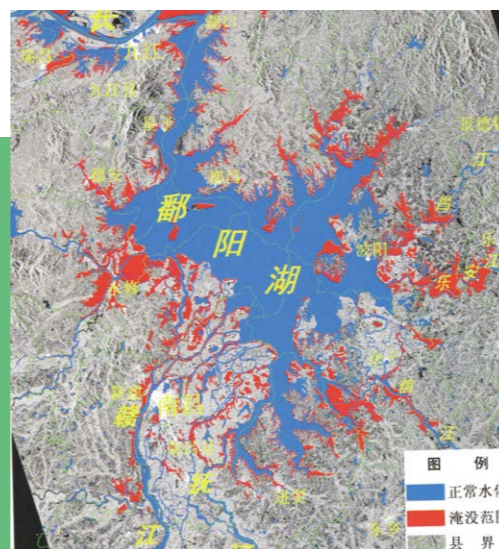
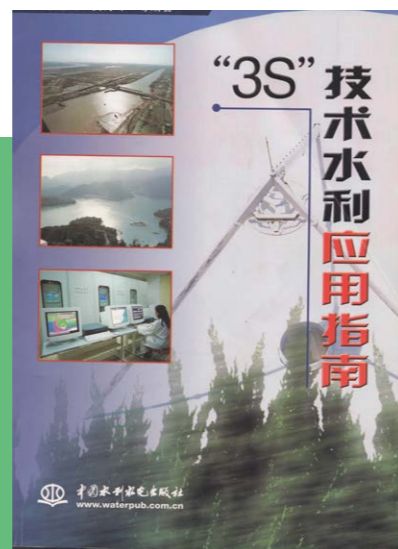
【创新性】

该书系统总结了“3S”技术理论及在防洪减灾、水资源管理、水土保持、旱情监测、灌溉面积调查、河道与河口动态变化监测、水环境、水库与湖泊蓄量监测等领域的应用，既有理论内容又有操作步骤和应用实例。创新性主要有三个方面：提出了一种非线性权重综合法，并基于此，首次运用3S技术实现了基于栅格全国洪水、洪灾危险程度区划；提出了遥感观测的有效灌溉面积、实际灌溉面积定义，并基于此，首次构建了基于3S技术的灌溉面积监测模型，为灌区规划和管理提供一种全新的综合分析手段；提出基于遥感的水库库容动态监测方法，实现了基于3S技术的水库库容曲线的动态更新。

【影响力】

该书是国内第一部详细介绍“3S”技术水利应用的著作，是水利类以及其他相关行业3S技术应用最具影响力的著作之一，开创了水利行业高新技术应用新篇章。该书是中国科学院大学、河海大学、郑州大学、南昌大学、中国水利水电科学研究院等院校的专业教材，也被南昌大学、中国水利水电科学研究院等院校指定为硕士、博士研究生入学考试参考书。著作培养了数代水利行业应用3S技术的科技工作者，带动了诸如基于水热平衡的流域水文模型等技术的发展新方向，对于推进了3S技术的水利行业应用、促进了水利信息化发展、推动了水利现代化进程发挥了重要作用。

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1988年资料：TM，分辨率30m
1999年资料：SPOT，分辨率20m

— 1988年水边线
— 1999年水边线
— 堤线

GUIDE FOR THE APPLICATION OF "3S" TECHNOLOGIES TO WATER CONSERVANCY

【Innovation】

This book summarizes the "3S" technologies theory and its application to flood control and disaster reduction, water resources management, water and soil conservation, drought monitoring, irrigated area investigation, monitoring of dynamic changes in channels and estuaries, water environment, reservoir and lake storage monitoring and other fields, with both theoretical content and operating steps and application examples. Innovativeness is demonstrated in three aspects: it proposes a non-linear weight synthetic method and on this basis, uses 3S technologies for the first time to realize the grid-based national zoning

【Influence】

It's the first book in China with detailed introduction on the application of 3S technology in water conservancy and one of the most influential books about the application of 3S technology in water conservancy and other related industries, and opens a new chapter for high-tech application in water conservancy industry. It is a textbook of the University of Chinese Academy of Sciences, Hohai University, Zhengzhou University, Nanchang University, IWHR and other universities, and is adopted as a reference book for postgraduate and doctoral entrance examinations of Nanchang University, IWHR and other universities. This book

of flood and flood criticality; it defines the effective irrigated area and actual irrigated area based on remote sensing observations and on this basis, establishes the first irrigated area monitoring model based on 3S technologies, providing a new comprehensive analysis approach for the planning and management of irrigation zones; it proposes a remote sensing-based dynamic monitoring method for capacity of reservoirs, and realizes the dynamic updating of reservoir capacity curve based on 3S technologies.

has helped to cultivate generations of technical workers in the application of 3S technologies to the water conservancy industry, driven new directions for development of the hydro-thermal equilibrium based hydrologic model of basin and other technologies, and played an important role in pushing ahead the application of 3S technologies to the water conservancy industry, the information based development and the modern development of water conservancy.

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