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Geoinformatics & Geostatistics: An Overview

Perspective

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Application in Hydrology by Public Participation Geographic Information System

Saisree Kondala *

Introduction

Geographic information systems has evolved useful and important tool in the field of hydrology for studying and managing Earth's water resources. Climate changes have greater demands on water resources. Occurrence of Water changes its spatially and temporally throughout the hydrologic cycle, Previously GIS systems were mostly static in their geospatial representation of hydrologic features, GIS platforms are becoming dynamic, between historical data and current hydrologic reality. Water resource management is consideration for development sustained in area. Computer aided analysis for resource management remote sensing technique with GIS has been developed. Utility of integration of satellite image data with that of geo referenced overlays produced from map and tabular data bases Remote Sensing, coupled with Geographic Information System is a powerful tool for monitoring the water quality and water pollution. Satellite imageries are used successfully in determination of various water quality parameters like Total Suspended Solids, turbidity, chlorophyll content, color, temperature etc. Using Visible, Reflected Infrared and Thermal Infrared bands of the Electro Magnetic Spectrum. Sustainable management of water resources uses Remote Sensing techniques.

Description

Many regions of the world, particularly in developing countries, water managers are often faced with the problem to design a water resources system many failures of such water supply systems they were designed with inadequate hydrological data. Collection of data design period form basis for the estimation of the reservoir storage capacity; to meet the demand such short time series were highly inadequate for purpose reservoir design requires the estimation of a reservoir to meet the demand. Statistical parameters are necessary to have long time series of hydrological data available. Idea of Technique presented here consists in the trick to extend the short observed runoff data time series with the aid of remotely sensed data, in this case satellite data obtained from the European satellite Meteosat, New GIS Data.

Their Management and Delivery

The management of water resources requires a wide range of spatial data, from hydrography and water distribution and collection representing the quantity of water resources, influencing the quality.

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and movement of water such as terrain, climate, soils, and land use, Hydrologic Modeling GI Science has influenced the implementation and development of hydrologic models at several different levels.

The examples that follow are instructive because they illustrate how GI Science has been used to address water supply, water quality, and storm-water management problems in several different contexts. By providing tools for computing these averaged values more efficiently and to include at least some level of spatial effects by partitioning entire watersheds into smaller sub-watersheds

Applications in hydrology of GIS

- Precipitation estimation
- Runoff computations
- Snow hydrology applications
- Evapotranspiration over land surface
- Evaluation of soil moisture content
- Water quality modeling
- Groundwater identification and estimation
- Hydrological modeling

Conclusion

Meeting the demand growing for food, fuel of increasing population land and water resources need to be optimally utilized. Requires timely and reliable information on land and water resources which derived from space borne multispectral data. GIS has highly sophisticated data management system to put together for storing the voluminous data typically required for hydrological studies. So, remote sensing and GIS together provide information base for efficient management of water resources.

*Corresponding author: Saisree Kondala, Department of Pharmacy, Andhra University Visakhapatnam, India Email: Saisreekondala.010@gmail.com

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Author Affiliation Top

Department of Pharmacy, Andhra University, Visakhapatnam, India