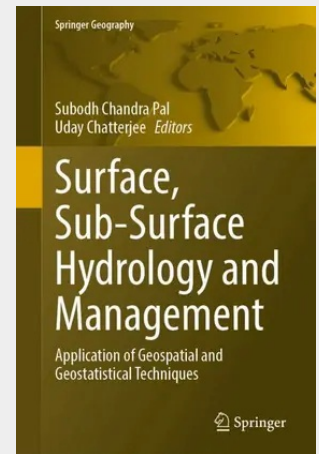


Surface, Sub-Surface Hydrology and Management

Application of Geospatial and Geostatistical Techniques

This book explores the surface and subsurface hydrological conditions and their management in a tropical or sub-tropical setting applying geospatial and geostatistical derived predictive methods. The book is a research of the surface and subsurface hydrological processes as a result of over-exploitation for agricultural production and irrigation, which resulted in a significant drop in water even during pre-monsoon period and a charge up study to control surface and subsurface water scarcity. Recent and expected trends indicate that future water challenges will become more complex. Over-exploitation of groundwater and surface water scarcity are posing an increasing threat to food security and rural livelihood stability. Understanding the features of groundwater and surface water and how they interact with the environment, population, and social aspects is a difficult challenge for researchers, they must provide guidance for sustainable resource management while balancing economic efficiency and ecological health. This book stands out for its focus on using geospatial and geostatistical methods to tackle practical issues. The chapters demonstrate how advanced analytical tools can be used to extract useful insights from complex hydrological datasets, such as mapping surface water flow patterns and delineating groundwater contamination plumes. Additionally, including case studies from various geographic areas offers readers a worldwide view on hydrological challenges and approaches to managing them. This book acts as a catalyst for more research and dialogue in the areas of Environmental Sciences, Geography, Hydrology, Natural Hazards, Geospatial Sciences, Remote Sensing & GIS, Agriculture, Crop-Science, Forestry, Soil Science, Agronomy, Humanistic & Social Sciences, etc., promoting organization in the field of surface and sub-surface hydrology. We aim to advance scientific knowledge and promote sustainable water resource management by combining expertise from various disciplines and highlighting the potential of geospatial and geostatistical techniques.

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192,59 €

179,99 € (zzgl. MwSt.)

Lieferfrist: bis zu 10 Tage

Artikelnummer: 9783031623752

Medium: Buch

ISBN: 978-3-031-62375-2

Verlag: Springer

Erscheinungstermin: 21.03.2025

Sprache(n): Englisch

Auflage: 2024

Serie: Springer Geography

Produktform: Gebunden

Gewicht: 1420 g

Seiten: 733

Format (B x H): 160 x 241 mm

