

1. Record Nr.	UNINA9910853988903321
Autore	Singh V. P (Vijay P.)
Titolo	Hydrological Processes Modelling and Data Analysis : A Primer // by Vijay P. Singh, Rajendra Singh, Pranesh Kumar Paul, Deepak Singh Bisht, Srishti Gaur
Pubbl/distr/stampa	Singapore : , : Springer Nature Singapore : , : Imprint : Springer, , 2024
ISBN	9789819713165 9819713161
Edizione	[1st ed. 2024.]
Descrizione fisica	1 online resource (298 pages)
Collana	Water Science and Technology Library, , 1872-4663 ; ; 127
Altri autori (Persone)	SinghRajendra PaulPranesh Kumar BishtDeepak Singh GaurSrishti
Disciplina	627
Soggetti	Hydraulic engineering Water Hydrology Climatology Hydraulic Engineering Climate Sciences
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Chapter 1. Introduction -- Chapter 2. Data Availability and Acquisition -- Chapter 3. Time-Series Analysis -- Chapter 4. Remote Sensing Driven Data Analysis and Geographic Information Systems (GIS) -- Chapter 5. Climate Change Impact Analysis -- Chapter 6. Land Use Land Cover (LULC) Change Analysis -- Chapter 7. Integrated Modelling Systems -- Chapter 8. Extreme Event Analysis -- Chapter 9. Uncertainty Analysis -- Chapter 10. Machine Learning (ML) /Artificial Intelligence (AI) in Water Resources -- Chapter 11. Emerging Fields in Hydrology -- Chapter 12. Case Study of Examples -- Chapter 13. Way Forward -- Index.
Sommario/riassunto	This book provides a state-of-the-art overview of the concepts and methodologies of data and modelling-driven hydrological analyses and

their wide range of practical applications. The book is driven by the realisation that science, technology, engineering, and mathematics (STEM) concepts are essential in engineering hydrology to produce well-trained hydrologists. Such hydrologists will be equipped to face future societal challenges that require enhanced information and communication technology tools and integration of technical and non-technical areas. The book contains 12 chapters that introduce the principles of hydrological data analysis and highlight the current and emerging tools and techniques for analysing hydrologic data. The book describes the types of data typically used in hydrological analyses. It highlights the revolutionary technological advancements made toward hydrological data collection, including the use of drones and smartphones. The foremost objective of the book is to present the hydrological data analysis procedures. It explains the steps involved in data analysis for easy understanding of the reader, including students and professionals. This book presents case studies that demonstrate step-by-step procedures involved in typical analysis problems and may guide students and professionals in planning and executing steps to analyse the problem at hand. Case study examples will guide them to understand the intricacies of hydrological data analysis. It provides the readers with a complete package to enrich their understanding of the hydrological data analysis tools and techniques. Subsequently, as well-trained hydrologists, they could execute their learning to meet any specific grand challenge of the twenty-first century.

---