journal of hydrology regional studies

Journal of Hydrology Regional Studies: Exploring Water Resources Through a Local Lens

journal of hydrology regional studies serves as a crucial platform for understanding the intricate dynamics of water systems on a regional scale. Unlike broader hydrological research that often focuses on global or continental perspectives, this journal zooms in on localized hydrological processes, offering insights that are vital for sustainable water management, environmental protection, and policy development tailored to specific regions.

In this article, we'll delve into what the Journal of Hydrology Regional Studies encompasses, why regional hydrology matters, and how this specialized field contributes to addressing some of the world’s most pressing water challenges. Along the way, we’ll touch on related concepts like watershed management, climate change impacts on regional water cycles, and the role of advanced modeling in hydrological research.

Understanding the Scope of the Journal of Hydrology Regional Studies

The Journal of Hydrology Regional Studies is dedicated to publishing research focused on hydrological phenomena within defined geographical or climatic regions. This can include everything from small catchments and river basins to entire climatic zones. The emphasis is on understanding how local factors — such as topography, soil type, vegetation, and human activities — influence water availability, quality, and movement.

Why Focus on Regional Hydrology?

Water systems are inherently complex and vary drastically from one region to another. The hydrological cycle in a mountainous area differs significantly from that in an arid desert or a tropical rainforest. By concentrating on regional studies, researchers can:

- Identify unique water challenges faced by local communities.
- Develop tailored water management strategies that consider local ecosystems.
- Enhance predictive models that improve water resource planning.
- Inform policymakers with region-specific scientific data.

This regional approach complements broader hydrological studies by filling in the detailed nuances that large-scale models might overlook.

Types of Research Featured

Within the journal, you'll find a wide range of studies, including:

- Watershed hydrology and runoff analysis
- Groundwater recharge and depletion patterns
- Impacts of land-use change on hydrological processes
- Regional climate variability and its effects on water cycles
- Flood risk assessment and mitigation strategies
- Water quality monitoring and contamination studies

These topics highlight the multidisciplinary nature of regional hydrology, integrating geology, ecology, climatology, and engineering.

The Importance of Regional Hydrology in Today's World

Water scarcity, pollution, and extreme weather events are increasingly frequent and severe due to climate change and human pressures. Understanding these phenomena at the regional level is essential for crafting effective responses.

Climate Change and Regional Water Cycles

One of the biggest challenges in hydrology today is predicting how climate change will alter regional water availability. Rising temperatures can shift precipitation patterns, leading to droughts in some areas and floods in others. The Journal of Hydrology Regional Studies often publishes research that models these impacts with high spatial resolution, enabling communities to prepare better.

For example, studies might analyze how snowmelt timing in mountainous regions is shifting, affecting river flow regimes downstream. Such insights allow water managers to adjust reservoir operations or irrigation schedules accordingly.

Role in Sustainable Water Resource Management

Sustainable water management depends on accurate, region-specific data. The journal's articles contribute to this by providing:

- Hydrological models tailored for local conditions
- Assessments of groundwater sustainability under current extraction rates
- Recommendations for land-use planning that minimizes negative water impacts

By integrating these findings, stakeholders can balance human needs with ecosystem preservation.

Advanced Techniques and Tools Highlighted in the Journal

Modern regional hydrology relies heavily on cutting-edge tools to collect data and simulate water processes.

Remote Sensing and GIS Applications

Satellite imagery and Geographic Information Systems (GIS) have revolutionized how researchers study water systems. They enable real-time monitoring of surface water changes, land cover, and soil moisture across wide areas. Articles in the journal often showcase innovative uses of these technologies to improve regional hydrological models and detect changes caused by natural or anthropogenic factors.

Hydrological Modeling and Simulation

From simple empirical models to complex, physically-based simulations, hydrological modeling is vital for understanding water flows and predicting future scenarios. The journal features studies employing models such as SWAT (Soil and Water Assessment Tool), HEC-HMS (Hydrologic Engineering Center's Hydrologic Modeling System), and regional climate models coupled with hydrological processes.

These models help in:

- Forecasting floods and droughts
- Evaluating the impact of land-use changes
- Supporting decision-making in water resource management

Integration of Socio-Hydrology

A recent trend in the Journal of Hydrology Regional Studies involves socio-hydrology, which examines the interactions between human societies and water systems. Understanding how communities adapt to hydrological changes and how their actions feedback into water cycles is key for sustainable development. This interdisciplinary approach combines hydrological data with social science research, offering a more holistic view.

How Researchers and Practitioners Benefit from the Journal

The Journal of Hydrology Regional Studies is not only a resource for academics but also for environmental consultants, water managers, and policymakers.

Enhancing Knowledge and Collaboration

By publishing peer-reviewed research focused on diverse regions worldwide, the journal fosters knowledge exchange and collaboration across disciplines and borders. This helps avoid duplication of efforts and encourages adoption of best practices.

Informing Policy and Practice

Water policies must be grounded in scientific evidence that reflects local realities. The journal’s case studies and regional assessments provide critical data that inform water governance, infrastructure development, and disaster risk reduction strategies.

Supporting Education and Capacity Building

Students and early-career researchers benefit from access to cutting-edge regional hydrology research, helping to train the next generation of water scientists and managers.

Emerging Trends and Future Directions in Regional Hydrology

As the field evolves, several exciting developments are shaping the future of regional hydrological studies.

Big Data and Machine Learning

The explosion of hydrological data from sensors, satellites, and citizen science initiatives is propelling the use of machine learning algorithms to analyze complex patterns and improve predictions. The journal is starting to feature studies that harness artificial intelligence to solve regional water

problems.

Climate Resilience and Adaptation Strategies

With climate change impacts intensifying, there is growing emphasis on developing adaptive water management approaches that enhance resilience at the regional level. Research in the journal is helping to identify effective interventions tailored to local vulnerabilities.

Interdisciplinary Approaches

Combining hydrology with ecology, economics, social sciences, and engineering will continue to enrich regional studies, offering comprehensive solutions to water challenges.

The Journal of Hydrology Regional Studies stands at the forefront of these developments, providing a vital platform for advancing our understanding of water in its diverse regional contexts. Whether you are a researcher, practitioner, or policymaker, engaging with this body of knowledge can empower more informed decisions and foster sustainable management of one of our most precious resources.

Frequently Asked Questions

What is the focus of the Journal of Hydrology: Regional Studies?

The Journal of Hydrology: Regional Studies focuses on the regional aspects of hydrology, including watershed hydrology, regional water resources management, and hydrological modeling at various spatial scales.

Which topics are commonly covered in the Journal of Hydrology: Regional Studies?

Common topics include catchment hydrology, regional climate impacts on hydrology, groundwater-surface water interactions, hydrological extremes, and regional water quality assessments.

Is the Journal of Hydrology: Regional Studies a peer-reviewed publication?

Yes, the Journal of Hydrology: Regional Studies is a peer-reviewed scientific journal ensuring the quality and validity of published research.

How can researchers submit their manuscripts to the Journal of Hydrology: Regional Studies?

Researchers can submit manuscripts through the journal’s online submission system available on the publisher’s website, following the provided author guidelines.

What types of articles are published in the Journal of Hydrology: Regional Studies?

The journal publishes original research articles, review papers, case studies, and technical notes related to regional hydrology.

Which publisher is responsible for the Journal of Hydrology: Regional Studies?

The Journal of Hydrology: Regional Studies is published by Elsevier, a leading academic publishing company.

How frequently is the Journal of Hydrology: Regional Studies published?

The journal is published on a regular basis, typically with multiple issues per year to cover the latest research developments.

Can I access articles from the Journal of Hydrology: Regional Studies online?

Yes, articles are accessible online through the publisher’s website, often requiring subscription or institutional access, though some articles may be open access.

What is the impact factor of the Journal of Hydrology: Regional Studies?

The impact factor varies yearly; for the most recent and accurate information, it is best to consult the Journal Citation Reports or the journal’s official website.

Additional Resources

Journal of Hydrology Regional Studies: A Crucial Resource for Water Science and Management

journal of hydrology regional studies serves as a pivotal platform for advancing knowledge on hydrological processes across diverse geographic and

climatic regions. As water resources face increasing pressures from climate change, urbanization, and environmental degradation, the need for regionally focused hydrological research has never been more critical. This journal offers a comprehensive and peer-reviewed forum dedicated to understanding water cycle dynamics, watershed management, and hydrological modeling tailored to specific regions worldwide.

The journal’s emphasis on regional studies distinguishes it from broader hydrology publications by highlighting localized challenges and solutions. Through rigorous scientific inquiry, the Journal of Hydrology Regional Studies fosters interdisciplinary collaboration between hydrologists, environmental scientists, engineers, and policymakers, ultimately supporting sustainable water resource management.

Scope and Focus of the Journal of Hydrology Regional Studies

The Journal of Hydrology Regional Studies concentrates on hydrological phenomena at scales ranging from small catchments to large river basins. Its coverage includes surface and groundwater interactions, precipitation patterns, evapotranspiration, and the impact of anthropogenic activities on water systems. By focusing on specific regions, the journal enables researchers to capture unique hydrological behaviors influenced by topography, climate variability, land use, and socio-economic factors.

This regional emphasis is particularly important given the heterogeneity of hydrological processes around the globe. For instance, monsoon dynamics in South Asia, snowmelt-driven river systems in North America, and arid zone hydrology in the Middle East all demand tailored approaches to research and management. The journal encourages submissions that explore these diverse settings, promoting comparative studies that enhance understanding of global water challenges through a regional lens.

Key Topics and Research Areas

The journal typically features original research articles, review papers, and case studies on topics such as:

- Hydrological modeling and simulation tailored to regional conditions
- Water balance assessments and watershed hydrology
- Groundwater recharge and depletion in regional aquifers
- Impact of climate change on regional hydrology and water availability

- Flood and drought risk analysis within specific basins
- Integrated water resource management strategies
- Remote sensing and GIS applications in regional hydrology

Such a range of topics ensures that the journal remains relevant to both academic researchers and practitioners involved in water resource planning and policy.

The Role of Regional Hydrology in Addressing Global Water Challenges

Water scarcity and quality issues are increasingly recognized as global crises. However, the manifestation of these problems is inherently regional. The Journal of Hydrology Regional Studies bridges this gap by focusing on localized hydrological assessments that inform broader water security strategies.

For example, studies published in the journal often highlight how regional climate variability alters rainfall distribution, affecting agriculture and urban water supply. Research on sediment transport and erosion within specific catchments provides valuable data for infrastructure design and land management. Furthermore, the journal’s contributions help refine hydrological models that predict the impacts of extreme weather events, enabling better preparedness and response at the community level.

Comparative Insights and Methodological Advances

A notable strength of the Journal of Hydrology Regional Studies is its facilitation of comparative analyses across different regions. By publishing research from various climatic zones and socio-economic contexts, the journal enables the identification of patterns and divergences in hydrological behavior. These insights are critical for developing adaptable and resilient water management practices.

Moreover, the journal often showcases methodological innovations such as:

- Advanced remote sensing techniques for monitoring hydrological variables
- Data assimilation methods integrating field measurements and satellite data
- Machine learning applications for predictive hydrology

- Novel statistical approaches for analyzing hydrological extremes

These advancements enhance the accuracy and applicability of regional hydrological studies, supporting evidence-based decision-making.

Accessibility and Impact on Water Resource Management

The Journal of Hydrology Regional Studies is widely accessible to researchers, practitioners, and policymakers, facilitating the translation of scientific findings into practical applications. Its interdisciplinary approach encourages collaboration between hydrologists and stakeholders from agriculture, urban planning, environmental conservation, and disaster management sectors.

By disseminating region-specific studies, the journal improves understanding of localized water issues, enabling tailored solutions rather than one-size-fits-all approaches. This specificity is essential for effective water governance, especially in regions vulnerable to climate extremes and competing water demands.

Challenges and Opportunities

While the journal plays a vital role in regional water science, it also faces challenges typical of specialized scientific publications. These include:

- Ensuring consistent high-quality submissions from diverse geographic areas
- Balancing technical depth with accessibility for non-specialist readers
- Integrating interdisciplinary perspectives without diluting hydrological rigor

Nevertheless, such challenges present opportunities for the journal to expand its reach and influence. Emphasizing open access models and encouraging contributions from underrepresented regions can enhance global knowledge exchange. Additionally, fostering partnerships with international water organizations may amplify the journal’s impact on policy and practice.

The Journal of Hydrology Regional Studies remains a cornerstone in the evolving landscape of water science. Its commitment to advancing

understanding of regional hydrological processes equips stakeholders with the insights needed to confront the complexities of water resource management in a changing world.

Journal Of Hydrology Regional Studies

journal of hydrology regional studies: Hydrogeology of Monserrat review and new insights B. Hemmings, F. Whitaker, J. Gottsmann, A.G. Hughes, 2015

journal of hydrology regional studies: Handbook of Himalayan Ecosystems and Sustainability, Volume 2 Bikash Ranjan Parida, Arvind Chandra Pandey, Mukunda Dev Behera, Navneet Kumar, 2022-11-22 Volume 2: Handbook of Spatio-Temporal Monitoring of Water Resources and Climate is aimed to describe the current state of knowledge and developments of geospatial technologies (Remote Sensing and Geographic Information Systems) for assessing and managing water resources under climate change. It is a collective achievement of renowned researchers and academicians working in the Hindu Kush Himalayan (HKH) mountain range. The HKH region is a part of the Third Pole outside the polar regions due to its largest permanent snow cover. Importantly, the Himalayan belt is geologically fragile and vulnerable to geohazards (e.g. landslides, land subsidence, rockfalls, debris flow, avalanches, and earthquakes). Therefore, critical assessment and geospatial solutions are indispensable to safeguard the natural resources and human beings in the Himalayas using space-borne satellite datasets. This book also showcases various remote sensing techniques and algorithms in the field of urban sprawling, urban microclimate and air pollution. The potential impacts of climate change on the cryosphere and water resources are also highlighted. This comprehensive Handbook is highly interdisciplinary and explains the role of geospatial technologies in studying the water resources of the Himalayas considering climate change. Key Features This book is unique as it focuses on the utility of satellite data for monitoring snow cover variability, snowmelt runoff, glacier lakes, avalanche susceptibility and flood modeling. Explain how Remote Sensing techniques are useful for mapping and managing the morphology and ecology of the Himalayan River. Addresses how geospatial technologies are valuable for understanding climate change impact on hydrological extremes, the potential impact of land use/land cover change (LULC) on hydrology and water resources management. It highlights the impact of LULC changes on land surface temperature, groundwater, and air pollution in urban areas. Includes contributions from global professionals working in the HKH region. Readership The Handbook serves as a valuable reference for students, researchers, scientists, Hydrologists, hydro-ecologists, meteorologists, geologists, decision makers and all others who wish to advance their knowledge on monitoring and managing water resources and urban ecosystem using remote sensing in the HKH region considering climate change.

journal of hydrology regional studies: Sustainable and Safe Dams Around the World / Un monde de barrages durables et sécuritaires Jean-Pierre Tournier, Tony Bennett, Johanne Bibeau, 2019-08-08 These proceedings include digital media with the full conference papers (3600+ pages). Sustainable and Safe Dams Around the World contains the contributions presented at the 2019 Symposium of the International Commission on Large Dams (ICOLD 2019, Ottawa, Canada, 9-14 June 2019). The main topics of the book include: 1. Innovation (recent advancements and

techniques for investigations, design, construction, operation and maintenance of water or tailings dams and spillways) 2. Sustainable Development (planning, design, construction, operation, decommissioning and closure management strategies for water resources or tailings dams, e.g. climate change, sedimentation, environmental protection, risk management). 3. Hazards (design mitigation and management of hazards to water or tailings dams, appurtenant structures, spillways and reservoirs (e.g. floods, seismic, landslides). 4. Extreme Conditions (management for water or tailings dams (e.g. permafrost and ice loading, arid/wet climates, geo-hazards). 5. Tailings (design, construction, operation and closure for tailings dams; recent advancements and best practice) Sustainable and Safe Dams Around the World will be invaluable to academics and professionals interested or involved in dams. Un monde de barrages durables et sécuritaires contiennent les contributions présentées lors du symposium de 2019 de la Commission internationale des grands barrages (CIGB 2019, Ottawa, Canada, 9-14 juin 2019). Les principaux sujets du livre incluent: 1. Innovation (Avancées et techniques récentes pour l'investigation, la conception, la construction, l'exploitation et l'entretien de barrages hydrauliques, de barrages de stériles et d'évacuateurs de crues) 2. Développement durable (stratégies de gestion pour la planification, la conception, la construction, l'exploitation, la mise hors service et la fermeture de barrages hydrauliques ou des barrages de stériles, par exemple, changement climatique, sédimentation, protection de l'environnement, gestion des risques). 3. Risques (mesures d'atténuation et gestion des risques liés aux barrages hydrauliques et barrages de stériles, aux ouvrages annexes, aux évacuateurs de crues et aux réservoirs, par exemple, inondations, tremblements de terre, glissements de terrain). 4. Environnement extrême (gestion des barrages hydrauliques et barrages de stériles, par exemple, pergélisol et charge de glace, climats secs / humides, géorisques). 5. Barrages de stériles (conception, construction, exploitation et fermeture des barrages de stériles; avancées récentes et meilleures pratiques). Un monde de barrages durables et sécuritaires seront d'une valeur inestimable pour les universitaires et les professionnels intéressés ou impliqués dans les barrages.

journal of hydrology regional studies: *Remote Sensing for Geophysicists* Mukesh Gupta, 2025-03-05 Geophysical exploration methods are very expensive and invasive methods for surveys. Remote sensing methods are non-invasive and much cheaper for investigating the Earth's surface. This book bridges this gap and aims to integrate exploration geophysics with remote sensing as a cost-effective method which is easy to implement for prospecting in different areas. It provides exploration geophysicists with the necessary information to use advanced remote sensing technology in the exploration of oil and gas, minerals, and groundwater. It describes the integration of remote sensing in each of the nine exploration methods based on over 11 case studies from different countries across the globe. Features: Describes the geophysical exploration methods that geophysicists frequently use, along with suitable remote sensing techniques Offers a well-structured one-stop guide for finding a suitable remote sensing technique for a specific geophysical exploration method Provides case studies on the exploration of oil, gas, and groundwater with step-by-step instructions using remote sensing technology Serves as a practical field book for exploration geophysicists who never used or rarely use remote sensing. Enables exploration geophysicists to understand and interpret remote sensing data for the assessment of complex explorations This book is an excellent resource for professionals, researchers, academics, and students with a background in remote sensing across many disciplines in Earth sciences such as geology, hydrology, petrology, mining, geography, geosciences, etc.

journal of hydrology regional studies: *Applications of Data Assimilation and Inverse Problems in the Earth Sciences* Alik Ismail-Zadeh, Fabio Castelli, Dylan Jones, Sabrina Sanchez, 2023-07-06 A comprehensive reference on data assimilation and inverse problems, and their applications across a broad range of geophysical disciplines, ideal for researchers and graduate students. It highlights the importance of data assimilation for understanding dynamical processes of the Earth and its space environment, and summarises recent advances.

journal of hydrology regional studies: *Principles of Water Law and Administration* Dante A. Caponera, Marcella Nanni, 2019-05-03 This book, which was first published in 1992 and then

updated in 2007, provides a tool for dealing with the legal and institutional aspects of water resources management within national contexts and at the level of transboundary water resources. Like its two previous editions, it seeks to cover all aspects that need to be known in order to attain good water governance, but it provides updates concerning developments since 2007. These relate, inter alia, to the following: - the “greening” of water law, which calls for the progressive integration of environmental law principles into domestic and international water law; - the adoption, by the International Law Commission in 2008, of the Draft Articles on the Law of Transboundary Aquifers, and subsequent developments; - the emergence of the right to water as a self-standing human right; - the adoption of domestic water laws supporting integrated water resources management (IWRM) and enhanced public participation in planning and decision making; - the integration into these laws of tools facilitating adaptive water management as a response to climate variability and change; - progress in the implementation of EU law; - recent international agreements and judicial decisions; - efforts of regional organizations other than the EU to steer cooperation in the management of transboundary water resources and the harmonization of national laws; - institutional mechanisms for the management of transboundary water resources (surface and underground). Unique in its scope and nature, the book identifies the legal and institutional issues arising in connection with water resources management and provides guidelines for possible solutions in a manner accessible to a wide range of readers. Thus, it is a useful reference for lawyers and non-lawyers — engineers, hydrologists, hydrogeologists, economists, sociologists — dealing with water resources within government institutions, river basin commissions, international organizations, financing institutions and academic institutions, among other things, and also for students of disciplines related to water resources.

journal of hydrology regional studies: *Climate Change Adaptation, Risk Management and Sustainable Practices in the Himalaya* Sanjeev Sharma, Jagdish Chandra Kuniyal, Pritam Chand, Pardeep Singh, 2023-03-10 This volume analyzes ecological and socio-economic risks due to climate change in the Himalayan mountain ecosystems, communities, and proposes adaptation strategies and sustainability practices. In order to better understand the potential actions required to improve natural resource conservation and the development of mountain people's livelihoods. The authors discuss the current status of local knowledge system on various environmental aspects of conservation and sustainable use of mountain resources in the Himalaya. The book addresses the institutional capacities, gaps, and priority areas of capacity building to strengthen policies and governance in regard to climate change, landuse management, biodiversity conservation, and sustainable management in the Himalayan region. The aim of this book is to enhance coordination building among policymakers, planners, mountain communities to foster collaboration between different stakeholders by understanding local perceptions of climate change as well as variability issues, and establishing adaptation strategies to cope with these impacts. The chapters incorporate theoretical and applied aspects, and may serve as baseline information for the sustainability of mountain ecosystems through the contribution of multidisciplinary and interdisciplinary expertise from the Himalayan region. The book will be useful for students, teachers, and researchers working in different areas pertaining to mountain ecosystems, as well as policymakers and planners working on issues related to the sustainability of the mountain ecosystem.

journal of hydrology regional studies: The Mekong Delta Environmental Research Guidebook Edward Park, Ho Huu Loc, Dung Duc Tran, 2024-11-14 The Mekong Delta Environmental Research Guidebook comprehensively covers the Mekong Delta and presents new evidence on unsolved environmental issues. Key experts from around the world offer suggestions for the implementation of more effective mitigation and adaptation measures, especially in the context of climate change and upstream hydropower dam development. This book will help guide students and scientists, both juniors and seniors in their journey of the Mekong Delta Environmental Research, by presenting them with all the necessary information and detailed case studies for a more in-depth understanding of each issue so they can make informed decisions. - Presents a multi-scale viewpoint about the Mekong Delta from a global, to regional and local scale so that

readers will gain a more holistic understanding of the issue from the root cause to solutions - Includes case-studies as empirical evidence to help researchers implement more effective mitigation and adaptation measures - Offers the most updated knowledge on strategies in halting environmental pressures, i.e., halting sinking delta and salinity intrusion

journal of hydrology regional studies: *Soil Salinity Management in Agriculture* S. K. Gupta, Megh R. Goyal, 2017-03-16 This important volume, Soil Salinity Management in Agriculture, addresses the crucial issue of soil salinity of potential farmland and provides a comprehensive picture of the saline environment and plant interactions, along with management and reclamation methods and policies. With contributions from researchers from the fields of agricultural chemistry, soil science, biotechnology, agronomy, environmental sciences, and plant breeding and genetics, the volume emphasizes a multidisciplinary approach.

journal of hydrology regional studies: *Engineering Geology of Groundwater in Design and Construction: Engineering Group Working Party Report* I.J. Duncan , U.L. Lawrence, 2025-09-16 The majority of ground engineering projects encounter water in one way or another. Delays and unforeseen costs inevitably follow when that encounter is unexpected, and the impacts can affect a surprisingly large area. To understand and manage the risks associated with groundwater, expertise is required in the areas of hydrogeology, hydrology, engineering geology, land quality, risk management, communication and planning. In view of the wider context that groundwater plays in support of our society, economy and environment, this Engineering Group Special Publication has been produced, offering best practice guidance and providing a general overview of groundwater in engineering geology, including modelling, risks and management. This book provides a state-of-the-art review and guidance for the management of risks associated with groundwater during design and construction of engineering projects. Engineering Geology of Groundwater in Design and Construction is intended to be practical, informative and to be of use to a wide spectrum of readers from a diversity of backgrounds and employments.

journal of hydrology regional studies: *Karst Hydrogeology, Geomorphology and Caves* Jo De Waele, Francisco Gutierrez, 2022-06-21 Karst Hydrogeology, Geomorphology and Caves A Comprehensive Resource Covering All Aspects of Karst Hydrogeology, Geomorphology, and Caves This essential book covers all physical, chemical, and geological aspects of karst science. It reviews current knowledge on hydrogeology, geomorphology and caves in karst, based on the vast existing literature and investigations carried out by the authors worldwide. The different topics are profusely illustrated with color figures and images from all continents and climates, showing the scientific and aesthetic appeal of karst environments. The book covers in a systematic way the significant features of karst rocks, the chemistry and kinetics of their dissolution, the rate and distribution of karst denudation, the unique hydrogeology of karst terrains, the landforms endemic to karst, the morphology of caves and their diverse sedimentary records, and the multiple processes that lead to the formation of underground voids. Overall, the work reflects the increasing recognition of karst as a fundamental part of the Earth’s dynamic systems, and helps readers understand this multidisciplinary field from a holistic and nuts-and-bolts perspective. Some of the ideas discussed within the book include: How karst is gaining importance for human development, because of its valuable resources (groundwater) and associated environmental problems (impacts and hazards) The enormous technological developments achieved in recent years Recent major breakthroughs in the field and their influence on other scientific disciplines The central role played by karst science for understanding and mitigating global environmental issues (global warming, depletion of resources, human-induced hazards) For all scientists working in karst, and for students and lecturers of karst-related programs, this book serves as a valuable all-in-one source. It is also a valuable resource for professional hydrogeologists, the petroleum industry, environmental geologists, and of course speleologists, the last true geographic explorers in the world.

journal of hydrology regional studies: The Aral Sea Basin Stefanos Xenarios, Dietrich Schmidt-Vogt, Manzoor Qadir, Barbara Janusz-Pawletta, Iskandar Abdullaev, 2019-09-17 This book offers the first multidisciplinary overview of water resources issues and management in the Aral Sea

Basin, covering both the Amu Darya and Syr Darya River Basins. The two main rivers of Amu Darya and Syr Darya and their tributaries comprise the Aral Sea Basin area and are the lifeline for about 70 million inhabitants in Central Asia. Written by regional and international experts, this book critically examines the current state, trends and future of water resources management and development in this major part of the Central Asia region. It brings together insights on the history of water management in the region, surface and groundwater assessment, issues of transboundary water management and environmental degradation and restoration, and an overview of the importance of water for the key economic sectors and overall socio-economic development of Central Asian countries, as well as of hydro politics in the region. The book also focusses on the future of water sector development in the Basin, including a review of local and international actors, as well as an analysis of the current status and progress towards the Sustainable Development Goals by Basin countries. The book will be essential reading for those interested in sea basin management, environmental policy in Central Asia and water resource management more widely. It will also act as a reference source for decision-makers in state agencies, as well as a background source of information for NGOs. Chapter 8 of this book is freely available as a downloadable Open Access PDF at http://www.taylorfrancis.com under a Creative Commons Attribution-Non Commercial-No Derivatives (CC-BY-NC-ND) 4.0 license.

journal of hydrology regional studies: *Water Sustainability and Hydrological Extremes* Manish Kumar, Vivek Agarwal, Rachel L Gomes, Durga Prasad Panday, 2024-10-21 Water Sustainability and Hydrological Extremes: Quantity, Quality, and Security presents a study for the mitigation of hydrological extremes through case studies. The focus is on the effect of extremes on water quality and the fate of geogenic, microbial, anthropogenic pollutants in the water cycle, and the interaction of water quality and quantity variations. The book integrates rapidly growing diverse topics, such as co-occurrence variation in water quantity and quality, water supply, sanitation, and hygiene. Stakeholders' participation and raising awareness for sustainable management strategies for hydrological extremes and water management systems is also covered.This thorough guide serves as a pillar to postgraduate students and researchers as it's centered on discovering remediation and natural attenuation of hydrological extremes with a special emphasis on present and future challenges. - Includes the latest research developments on issues affecting water sustainability and water supply, sanitation, and hydrological extremes - Offers summaries and recommendations at the end of each chapter to highlight key information in a simplified manner - Contains illustrative diagrams and graphical abstracts to summarize dense scientific conclusions

journal of hydrology regional studies: Hydraulic and Civil Engineering Technology VII M. Yang, J.C.G. Lanzinha, P. Samui, 2022-12-23 Engineering technology is of crucial importance to the infrastructure on which modern societies depend, and keeping abreast of the latest research and developments in the field is of vital importance. This book presents the proceedings of HCET 2022, the 7th International Technical Conference on Frontiers of Hydraulic and Civil Engineering Technology, originally due to be held, in Sanya, China, from 25-27 September 2022, but instead held as a fully virtual event on Zoom due to continued uncertainty related to the Covid 19 pandemic. HCET is a platform for the dissemination of research results on the latest advances in the areas of hydraulic and civil engineering technology and environmental engineering, and provides an opportunity for scientists, researchers and engineers from around the world to exchange their findings, discuss developments, and possibly establish a basis for collaboration. A total of 275 submissions were received from international contributors, and all were subjected to a rigorous peer-review process, with each paper reviewed by a minimum of two experts. Papers were also checked for quality and plagiarism, after which, 163 papers were accepted for presentation and publication. Topics covered include the research and development of concrete structure design and analysis, structural mechanics and structural engineering, geological exploration and earthquake engineering, building technology, urban planning, energy, environment and advanced engineering science and applications. The book offers a state-of-the-art overview of recent developments, and will be of interest to all those working in the fields of hydraulic and civil engineering technology.

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