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Weathering Physical and Chemical Weathering in Geochemical Cycles Rates of Chemical Weathering of Rocks and Minerals The Chemistry of Weathering Weathering Weathering and Erosion Processes in the Natural Environment Weathering and Erosion Processes in the Natural Environment Physical and Chemical Weathering in Geochemical Cycles Novel Isotope Systems and Biogeochemical Cycling During Cryospheric Weathering in Polar Environments Silicate Versus Carbonate Weathering in the Himalaya Mountains and the New Zealand Southern Alps Weathering Rock Weathering and Soil Profile Development in the Hawaiian Islands A Look at Erosion and Weathering Weathering Effects of Landuse and Weathering on Available Nutrients in Volcanic Ash Soils of Costa Rica Weathering and Landscape Evolution Weathering as a Predisposing Factor to Slope Movements Chemical Weathering Rates of Silicate Minerals Weathering and the Riverine Denudation of Continents Geochronology of Weathering in the Mt Isa and Charters Towers Regions, Northern Queensland Weathering and Erosion Aspects of Stone Weathering, Decay and Conservation Hydrogeochemistry and Kinetics of Silicate Weathering in a Gabbroic Watershed, Filson Creek, Northeastern Minnesota Rates of erosion and weathering in the British Isles Surface and Ground Water, Weathering, and Soils Ionic Migration and Weathering in Frozen Antarctic Soils Weathering Natural Stone, Weathering Phenomena, Conservation Strategies and Case Studies Weathering the Storm Erosion and Weathering The Weathering of Natural Building Stones Weathering, Soils & Paleosols Rates of Erosion and Weathering in the British Isles Accelerated Testing Geomorphology in the Tropics Bulletin of the Geological Society of America Geomorphology in the Tropics Geographical Abstracts Weathering Weathering

Weathering

2011

weathering is an important phenomenon of the geochemical cycle as it contributes to the relief formation it corresponds to a general term applied to physical and chemical changes suffered by rocks as a consequence of their exposition to different conditions of humidity and temperature in this book the authors present topical research in the study of the types processes and effects of weathering topics discussed include the use of weathering indices in rock research geomorphic processes in the last glacial age understanding chemical weathering in affecting the earth s surface weathering of dimensional granite stones used as cladding and the weathering process and desert pavement development

Physical and Chemical Weathering in Geochemical Cycles

2012-12-06

proceedings of the nato advanced study institute aussois france september 4 15 1985

Rates of Chemical Weathering of Rocks and Minerals

1986-02-28

researchers in geomorphology geochemistry quaternary geology soil science and mineralogy will welcome this volume the first to focus exclusively on rates of silicate chemical weathering consisting largely of previously unpublished data from six countries the volume examines the latest experimental modelling and field results new information is presented on topics of current research interest including inferences about chemical mechanisms at the level of mineral surfaces and data relating weathering rates to landscape evolution over millions of years the volume integrates the variety of approaches used by diverse subdisciplines in the assessment of weathering rates and provides up to date references

The Chemistry of Weathering

2012-12-06

several important developments in our understanding of the chemistry of weathering have occurred in the last few years 1 there has been a major breakthrough in our understanding of the mechanisms controlling the kinetics of sil icate dissolution and there have been major advances in computer modeling of weathering processes 2 there has been a growing recognition of the importance of organic solutes in the weathering process and hence of the inter relationships between mineral weathering and the terrestrial ecosystem 3 the impact of acid deposition acid rain has been widely recognized the processes by which acid deposition is neutral ized are closely related to the processes of normal chemical weathering an understanding of the chemistry of weathering is thus essential for predicting the effects of acid deposition 4 more high qual ity data have become available on the chemical dynamics of smal i watersheds and large river systems which represent the integrated effects of chemical weathering

Weathering

1975

weathering and erosion processes in the natural environment an indispensable introduction to the key environmental processes of weathering and erosion natural and human induced weathering processes can have a great impact on soil and groundwater quality with climate change and other environmental challenges placing increased emphasis on these resources it has never been more important for researchers and environmental professionals to attain detailed knowledge of weathering and erosion processes weathering and erosion processes in the natural environment meets this need with a rigorous systematic overview beginning with a description of different forces and processes that contribute to weathering it then discusses the different kinds of landforms that can be produced by weathering and erosion processes as well as the potential impacts of hydrogeological processes on both surface water and groundwater the result is a volume that balances qualitative and quantitative understanding of this crucial subject weathering and erosion processes in the natural environment readers will also find documented examples in which weathering and erosion processes have led to heavy metals and other trace elements in groundwater detailed discussion of climate change impacts including extreme weather events and rising carbon dioxide levels modeling approaches throughout to enable quantitative assessment and predictions of future impact weathering and erosion processes in the natural environment is ideal for researchers and advanced students in geology geochemistry hydrogeochemistry and environmental science as well as professionals dealing with water and soil management

Weathering and Erosion Processes in the Natural Environment

2023-12-22

weathering and erosion processes in the natural environment an indispensable introduction to the key environmental processes of weathering and erosion natural and human induced weathering processes can have a great impact on soil and groundwater quality with climate change and other environmental challenges placing increased emphasis on these resources it has never been more important for researchers and environmental professionals to attain detailed knowledge of weathering and erosion processes weathering and erosion processes in the natural environment meets this need with a rigorous systematic overview beginning with a description of different forces and processes that contribute to weathering it then discusses the different kinds of landforms that can be produced by weathering and erosion processes as well as the potential impacts of hydrogeological processes on both surface water and groundwater the result is a volume that balances qualitative and quantitative understanding of this crucial subject weathering and erosion processes in the natural environment readers will also find documented examples in which weathering and erosion processes have led to heavy metals and other trace elements in groundwater detailed discussion of climate change impacts including extreme weather events and rising carbon dioxide levels modeling approaches throughout to enable quantitative assessment and predictions of future impact weathering and erosion processes in the natural environment is ideal for researchers and advanced students in geology geochemistry hydrogeochemistry and environmental science as well as professionals dealing with water and soil management

Weathering and Erosion Processes in the Natural Environment

2024-03-04

proceedings of the nato advanced study institute aussois france september 4 15 1985

Physical and Chemical Weathering in Geochemical Cycles

1988-11-30

weathering is atmospheric geological temporal transformative it implies exposure to the elements and processes of wearing down disintegration or accrued patina weathering can also denote the ways in which subjects and objects resist and pass through storms and adversity this volume contemplates weathering across many fields and disciplines its contributions examine various surfaces environments

scales temporalities and vulnerabilities what does it mean to weather or withstand who or what is able to pass through safely what is lost or gained in the process

Novel Isotope Systems and Biogeochemical Cycling During Cryospheric Weathering in Polar Environments

2021-04-29

full page photos and graphs illustrate the topics covered while easy to comprehend text helps readers understand the concepts of erosion and weathering including the difference between these two processes and how they affect rocks in the rock cycle

Silicate Versus Carbonate Weathering in the Himalaya Mountains and the New Zealand Southern Alps

2001

our landscape is constantly changing but before the dramatic effects of erosion and mass movement take place more subtle forces work on the rocks minerals and soils around us weathering is the initial process which exposes the top few layers of the earth to the potential for change this book provides an introduction to the scientific principles behind mechanical chemical and biological weathering starting with a consideration of the chemical and physical properties of rocks and water the authors proceed to an accessible explanation of the weathering processes themselves concluding with a review of weathering rates and intensities and a survey of the effects of weathering on the landscape assuming little background knowledge the authors develop ideas from first principles to provide a straightforward introduction to weathering for students of geography geology and earth and environmental science

Weathering

2020-10-06

in recognition of the fundamental control exerted by weathering on landscape evolution and topographic development the 35th binghamton geomorphology symposium was convened under the theme of weathering and landscape evolution the papers and posters presented at the conference imparted the state of the art in weathering geomorphology tackled the issue of scale linkage in geomorphic studies and offered a vehicle for interdisciplinary communication on research into weathering and landscape evolution the papers included in this book are encapsulated here under the general themes of weathering mantles weathering and relative dating weathering and denudation weathering processes and controls and the big picture contains 15 papers on the techniques and methodologies of research

provides an up to date overview of various aspects of weathering and landscape evolution complemented by a number of excellent case studies contains a wealth of basic field data and relevant information

Rock Weathering and Soil Profile Development in the Hawaiian Islands

1941

this volume is intended to provide an up to date overview of the approaches methodologies and techniques devoted to better understand ing of the weathering conditions of rock masses on slopes according to the local conditions a variety of slope movements may take place and involve weathered rock masses shallow and rapid soil slips evolving to debris flows are probably the most common type of slope movement at the same time deep seated intermittent landslides can also affect large volumes of weathered rocks and soils despite the high frequency of landslides in weathered materials and the damage and casualties they repeatedly cause little is known about the relationship between weathering and slope move ments this book presents worldwide case studies where a variety of geo logical and geomorphological settings are discussed the content is divided into three sections the first is devoted to broad aspects of the weathering landslide processes the second and third sections include papers dealing with igneous metamorphic and sedimentary weathered rocks respec tively

A Look at Erosion and Weathering

2015-12-15

volume 31 of reviews in mineralogy reviews current thinking on the fundamental processes that control chemical weathering of silicates including the physical chemistry of reactions at mineral surfaces the role of experimental design in isolating and quantifying these reactions and the complex roles that water chemistry hydrology biology and climate play in weathering of natural systems the chapters in this volume are arranged to parallel this order of development from theoretical considerations to experimental studies to characterization of natural systems secondly the book is meant to serve as a reference from which researchers can readily retrieve quantitative weathering rate data for specific minerals under detailed experimental controls or for natural weathering conditions toward this objective the authors were encouraged to tabulate available weathering rate data for their specific topics finally this volume serves as a forum in which suggestions and speculations concerning the direction of future weathering research are discussed

Weathering

2016-05-06

in this monograph the authors present an overview of the state of the art and use examples or case histories to illustrate the combined role of rock decay and rivers on continental denudation the earth s surface dynamics would not be conceivable without the fundamental component of rock weathering and the subsequent transport of solid debris and dissolved components to the coastal ocean through riverine drainage pathways in other words continental wear away is highly dependent on the mechanisms that control mineral decay moreover besides the significant role played by rivers in shaping the earth s outer skin there is the important function that rivers perform in all geochemical cycles mediating between the lithosphere the hydrosphere the biosphere and the hydrosphere drainage basins and the weathering of rocks that occur therein may be significant sources or sinks of carbon dioxide and hence play a significant role in affecting the earth s climate

Effects of Landuse and Weathering on Available Nutrients in Volcanic Ash Soils of Costa Rica

1995

this series offers a detailed informative and lively discussion on four of the key areas of physical geography each book helps develop the knowledge of how specific features of the earth are formed their causes and effects patterns and processes and our study and understanding of them the series aims not only to answer but also to inspire questions about different environments and landscapes and our relationships with some of the greatest forces of nature we experience on earth photographs bring the effects of the subject vividly to life while diagrams enhance the readers practical understanding of the processes that have created the landscapes of the world in which we live today

Weathering and Landscape Evolution

2005-08-04

this book brings together papers by scientists conservators and building surveyors active in stone decay and conservation research within the uk it addresses issues of stone weathering mechanisms and rates the effects of urban pollution cleaning methods and the role of the conservator within research the concepts regarding the value of stone heritage are also discussed as an important aspect towards retaining our diverse building heritage contents gravestones problems and potentials as indicators of historic changes in weathering r j inkpen role of atmospheric sulphur dioxide in the sulphation reaction

of frescoes n schiavon g schiavon moisture loss from stone influenced by salt accumulation b j smith e m kennedy characterisation of decay features on sandstone following cleaning preliminary observations p a warke et al removal and analysis of soluble salts from chemically cleaned sandstones s p fernandez et al contingent valuation comes to town n gomersall cleaning of stone buildings the applicability of established value assessment methodologies r a laing d urquhart carved stones i a g shepherd effect of hydrocarbons on biofilm development on sandstone r v yordanov k nicholson heat and mass transfer at the surface of two sandstone types under different atmospheric conditions s p fernandez p martin new instruments for monitoring algae populations on stone surfaces e brechet et al and other papers readership conservators and building surveyors keywords stone decay conservation urban pollution cleaning methods building heritage

Weathering as a Predisposing Factor to Slope Movements

2010

volume 5 has several objectives the first is to present an overview of the composition of surface and ground waters on the continents and the mechanisms that control the compositions the second is to present summaries of the tools and methodologies used in modern studies of the geochemistry of surface and ground waters the third is to present information on the role of weathering and soil formation in geochemical cycles weathering affects the chemistry of the atmosphere through uptake of carbon dioxide and oxygen and paleosols preserved soils in the rock record provide information on the composition of the atmosphere in the geological past reprinted individual volume from the acclaimed treatise on geochemistry 10 volume set isbn 0 08 043751 6 published in 2003 present an overview of the composition of surface and ground waters on the continents and the mechanisms that control the compositions provides summaries of the tools and methodologies used in modern studies of the geochemistry of surface and ground waters features information on the role of weathering and soil formation in geochemical cycles contains information on the composition of the atmosphere in the geological past reprinted individual volume from the acclaimed treatise on geochemistry 10 volume set

Chemical Weathering Rates of Silicate Minerals

2018-12-17

soils of continental antarctica are forming in one of the most severe terrestrial environments continuously low temperatures and the scarcity of water in the liquid state result in the development of desert type soils in an earlier experiment to determine the degree to which radioactive na cl 36 would migrate from a shallow point source in permafrost movement was observed to confirm this result a similar experiment involving na 22 cl was conducted significantly less movement of the na 22 ion was observed ionic movement in the unfrozen interfacial films at mineral surfaces in frozen ground is held to be important in chemical weathering in antarctic soils

Weathering and the Riverine Denudation of Continents

2013-11-19

rocks and mountains have withstood aeons of life on our planet gradually eroding shifting solidifying and weathering we might spend a little less time on earth but humans are also weathering evolving and changing as we re transformed by the shifting climates of our lives and experiences so what might these ancient natural forms have to teach us about resilience and change in a stunning exploration of our own connection to these enduring forms outdoor psychotherapist and geologist ruth allen takes us on a journey through deep time and ancient landscapes showing how geology which has formed the bedrock of her own adult life and approach to therapy can offer us a new way of thinking about our own grief change and boundaries in a world shaken by physical political and medical disasters weathering argues for a deeper understanding of the ground beneath our feet to better serve ourselves and the world we live in

Geochronology of Weathering in the Mt Isa and Charters Towers Regions, Northern Queensland

2002

this book presents the memoirs of sverre pettersen prominent leader in the field of meteorology delving through his recollections of his childhood in norway education and work at the famous bergen school of meteorology to the world war ii crisis and d day petterssen uncovers the history of meteorology documenting it from his perspective meteorology today is the beneficiary of his work

Weathering and Erosion

2005

rocks break down through the processes of erosion and weathering readers will learn through graphic organizers and simple at level text what causes erosion and weathering and how this process is part of the rock cycle chapters explore topics such as how erosion and weathering create landforms and form sediment the human role in erosion and weathering is also explained both how human actions can exacerbate these processes and steps people take to slow them down videos photographs and graphic organizers create an enhanced experience in the interactive ebook version these features supplement the print version with additional high interest information

Aspects of Stone Weathering, Decay and Conservation

1999-03-04

provides a general account of the factors which cause decay of building stones and a summary of the best methods to reduce the incidence of decay it discusses weathering associated with natural defects inherent in stone and examines issues of weathering caused by bad workmanship or errors in the selection of material decay through chemical and natural physical phenomena are discussed in detail the final sections offer useful advice on how to prevent long term decay through appropriate repair replacement and cleaning of stone

Hydrogeochemistry and Kinetics of Silicate Weathering in a Gabbroic Watershed, Filson Creek, Northeastern Minnesota

1981

for the past 200 years geological scientists have used the present as a key to unlocking the past this volume continues the tradition by exploring the processes of weathering and soil formation as indicators of the present environment of the earth s land surface examined are the various ways in which this information can be used to interpret past environments which have produced the soils now preserved as paleosols because the surface environment of the earth may now be undergoing rapid change the greenhouse effect the book is a timely one for those researchers looking for evidence of analogous changes in the earth s past the work is divided into three major sections the first deals with fundamental considerations of weathering clay mineralogy and diagenesis the second deals with the formation of soils from various starting materials and in various surficial environments and the final section is an interpretation of paleosols this volume provides valuable reading material for graduate and senior undergraduate courses

Rates of erosion and weathering in the British Isles

1965

from the foreword accelerated testing nature and artificial weathering in the coatings industry is aimed at all those involved or interested in creating producing applying and testing modern high quality coatings for outdoor use coatings are exposed to a great many severe natural stresses that cause a gradual deterioration of the properties which are responsible for the coatings very quality nevertheless buyers expect coated products to remain in an as new condition which is mostly characterised by a highly attractive appearance and intact surface for as long as possible this calls for coatings of high

weatherability and long service life in this book accelerated testing through its simulation of the destructive action of natural weathering is the means for testing this coating quality test engineers shoulder much responsibility because not only must the results form the basis for reliable predictions but they must also be obtained economically and as quickly as possible their results are the dominant factor in any decision to take a new coating creation into series production accelerated testing has become an indispensable tool in the paint and coatings chemistry as a means of avoiding nasty surprises by coatings in normal use other methods of predicting service life are still too unreliable given the extent of current weathering knowledge modern day high quality coatings are highly complex systems which contain numerous essential additives not surprisingly coatings chemistry is therefore sometimes jokingly likened to alchemy but natural weathering in all its random manifestations of different impact is equally complex words alone cannot describe how best to simulate the team like interaction of such a complex system in the laboratory there is more to successful simulation than applying a standardized test method or switching on a fully controlled weathering device which has been marketed as an all rounder it takes know how experience and skill this book will help such abilities to be acquired

Surface and Ground Water, Weathering, and Soils

2005-11-21

many advances have been made in our understanding of tropical geomorphology in recent decades but the field remains relatively neglected with current widespread concern about the damage to tropical ecosystems it is time for a new study of geomorphology in the tropics the author endeavours to provide a tropical perspective on geomorphology rather than a compartmentalised tropical geomorphology the importance of weathering and the materials of the weathered mantle in determining the outcome of erosional processes is emphasised the impact of quaternary climate changes in creating superficial forms and deposits is stressed as being fundamental in the tropics as in other parts of the world nevertheless the tropical landscape exhibits forms and deposits that have evolved over long time periods in the absence of frost and ice justifying an evolutionary approach to the long term development of landscape the book is important to a broad spectrum of earth science interests including geotechnical and engineering studies and soil science as well as to students of geomorphology people working in the tropics will encounter the processes and products of tropical denudation systems and the fragile nature of many of the surface materials discussed in this volume demands a deeper understanding of their behaviour no other book currently attempts this task and this study fills a serious gap in the literature of geomorphology

Ionic Migration and Weathering in Frozen Antarctic Soils

1973

vols 1 44 include proceedings of the annual meeting 1889 1933 later published separately

Weathering

2024-03-28

a new york times notable book of the year pearl doesn t know how she s ended up in the river the same messy cacophonous river in the same rain soaked valley she d been stuck in for years but here her spirit swirls and stays ada pearl s daughter doesn t know how she s ended up back in the house she left thirteen years ago with no heating apart from a fire she can t light no way of getting around apart from an old car she s scared to drive and no company apart from her own young daughter pepper she wants to clear out pearl s house so she can leave and not look back pepper has grown used to following her restless mother from place to place but this house with its faded photographs its boxes of cameras and its stuffed jackdaw is something new fascinated by the scattering of people she meets by the river that unfurls through the valley and by the strange old woman who sits on the bank with her feet in the cold coppery water pepper doesn t know why anyone would ever want to leave as the first frosts of autumn herald the coming of a long winter and pepper and ada find themselves entangled with the life of the valley with new companions who won t be closed out each will discover the ways that places can take root inside us bind us together and become us

Natural Stone, Weathering Phenomena, Conservation Strategies and Case Studies

2002

Weathering the Storm

2015-03-30

Erosion and Weathering

2014-01-01

The Weathering of Natural Building Stones

2016-01-20

Weathering, Soils & Paleosols

2013-10-22

Rates of Erosion and Weathering in the British Isles

196?

Accelerated Testing

2008-12-17

Geomorphology in the Tropics

1994-07-19

Bulletin of the Geological Society of America

1898

Geomorphology in the Tropics

1994

Geographical Abstracts

1986

Weathering

2016-01-19

Weathering

1986-05-01

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