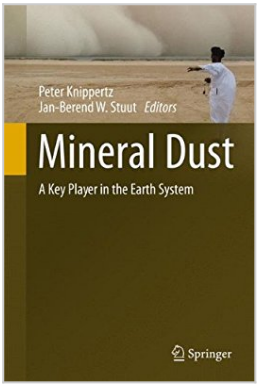

Mineral Dust: A Key Player in the Earth System

From Springer

Mineral Dust: A Key Player in the Earth System From Springer

This volume presents state-of-the-art research about mineral dust, including results from field campaigns, satellite observations, laboratory studies, computer modelling and theoretical studies. Dust research is a new, dynamic and fast-growing area of science and due to its multiple roles in the Earth system, dust has become a fascinating topic for many scientific disciplines. Aspects of dust research covered in this book reach from timescales of minutes (as with dust devils, cloud processes and radiation) to millennia (as with loess formation and oceanic sediments), making dust both a player and recorder of environmental change.

The book is structured in four main parts that explore characteristics of dust, the global dust cycle, impacts of dust on the Earth system, and dust as a climate indicator. The chapters in these parts provide a comprehensive, detailed overview of this highly interdisciplinary subject.

The contributions presented here cover dust from source to sink and describe all the processes dust particles undergo while travelling through the atmosphere. Chapters explore how dust is lifted and transported, how it affects radiation, clouds, regional circulations, precipitation and chemical processes in the atmosphere and how it deteriorates air quality. The book explores how dust is removed from the atmosphere by gravitational settling, turbulence or precipitation, how iron contained in dust fertilizes terrestrial and marine ecosystems, and about the

role that dust plays in human health. We learn how dust is observed, simulated using computer models and forecast. The book also details the role of dust deposits for climate reconstructions.

Scientific observations and results are presented, along with numerous illustrations. This work has an interdisciplinary appeal and will engage scholars in geology, geography, chemistry, meteorology and physics, amongst others with an interest in the Earth system and environmental change.

body>

Mineral Dust: A Key Player in the Earth System

From Springer

Mineral Dust: A Key Player in the Earth System From Springer

This volume presents state-of-the-art research about mineral dust, including results from field campaigns, satellite observations, laboratory studies, computer modelling and theoretical studies. Dust research is a new, dynamic and fast-growing area of science and due to its multiple roles in the Earth system, dust has become a fascinating topic for many scientific disciplines. Aspects of dust research covered in this book reach from timescales of minutes (as with dust devils, cloud processes and radiation) to millennia (as with loess formation and oceanic sediments), making dust both a player and recorder of environmental change.

The book is structured in four main parts that explore characteristics of dust, the global dust cycle, impacts of dust on the Earth system, and dust as a climate indicator. The chapters in these parts provide a comprehensive, detailed overview of this highly interdisciplinary subject.

The contributions presented here cover dust from source to sink and describe all the processes dust particles undergo while travelling through the atmosphere. Chapters explore how dust is lifted and transported, how it affects radiation, clouds, regional circulations, precipitation and chemical processes in the atmosphere and how it deteriorates air quality. The book explores how dust is removed from the atmosphere by gravitational settling, turbulence or precipitation, how iron contained in dust fertilizes terrestrial and marine ecosystems, and about the

role that dust plays in human health. We learn how dust is observed, simulated using computer models and forecast. The book also details the role of dust deposits for climate reconstructions.

Scientific observations and results are presented, along with numerous illustrations. This work has an interdisciplinary appeal and will engage scholars in geology, geography, chemistry, meteorology and physics, amongst others with an interest in the Earth system and environmental change.

body>

Mineral Dust: A Key Player in the Earth System From Springer Bibliography

- Sales Rank: #2906111 in Books
- Published on: 2014-09-03
- Original language: English
- Number of items: 1
- Dimensions: 9.21" h x 1.19" w x 6.14" l, .0 pounds
- Binding: Hardcover
- 509 pages

Editorial Review

Review

“The book opens up with origin of mineral dusts, fundamental chemistry, morphology, size distribution and dust deposition. … It is strongly felt that the book has potential to be recommended to earth science scholars, specifically those having specific vision of exploring complex aerosol–earth system interactions with simple perspectives. Additionally, it may well serve as a link between fundamentals and research, and possibly help perspective readers in developing curiosity for exploring mineral dust–earth interactions.” (M. Kumar, R. S. Singh and T. Banerjee, Pure and Applied Geophysics, 2015)

From the Back Cover

This volume presents state-of-the-art research about mineral dust, including results from field campaigns, satellite observations, laboratory studies, computer modelling and theoretical studies. Dust research is a new, dynamic and fast-growing area of science and due to its multiple roles in the Earth system, dust has become a fascinating topic for many scientific disciplines. Aspects of dust research covered in this book reach from timescales of minutes (as with dust devils, cloud processes, and radiation) to millennia (as with loess formation and oceanic sediments), making dust both a player and recorder of environmental change.

The book is structured in four main parts that explore characteristics of dust, the global dust cycle, impacts of dust on the Earth system, and dust as a climate indicator. The chapters in these parts provide a comprehensive, detailed overview of this highly interdisciplinary subject.

The contributions presented here cover dust from source to sink and describe all the processes dust particles undergo while travelling through the atmosphere. Chapters explore how dust is lifted and transported, how it affects radiation, clouds, regional circulations, precipitation and chemical processes in the atmosphere, and how it deteriorates air quality. The book explores how dust is removed from the atmosphere by gravitational settling, turbulence or precipitation, how iron contained in dust fertilizes terrestrial and marine ecosystems, and abou

t the role that dust plays in human health. We learn how dust is observed, simulated using computer models and forecast. The book also details the role of dust deposits for climate reconstructions.

Scientific observations and results are presented, along with numerous illustrations. This work has an interdisciplinary appeal and will engage scholars in geology, geography, chemistry, meteorology and physics, amongst others with an interest in the Earth system and environmental change.

About the Author

Peter Knippertz is an expert in meteorological aspects of dust storms. He received his PhD in Meteorology from the University of Cologne (Germany) in 2003 and was a researcher at the Universities of Wisconsin-Madison (USA, 2003–2005), Mainz (Germany, 2005–2009), where he received his habilitation in 2008, and Leeds (UK, 2009–2013). In 2013 he moved to the Karlsruhe Institute of Technology (Germany), where he is

now a Professor of Meteorology. He is currently leading a major 5-year project on dust emission funded by the European Research Council and a large European consortium on cloud-aerosol interactions in West Africa funded by the European Commission.

Jan-Berend Stuut has been working on aeolian dust from a marine perspective since his PhD, which he received from Utrecht University (the Netherlands) in 2001. After his PhD, he worked as a postdoctoral researcher at the Research Center Ocean Margins and the MARUM – Center for Marine Environmental Sciences, both at the University of Bremen, focusing on marine archives of mineral dust. He then moved to the NIOZ - Royal Netherlands Institute for Sea Research in 2009 to further study modern dust deposition processes in and offshore deserts around the world. Since 2012 he is leading two projects on the marine environmental effects of Saharan funded by both the Dutch NSF (NWO) and the European Research Council (ERC). He is still affiliated to MARUM, Bremen, where he also leads a project on Saharan dust deposition in the A

tlantic Ocean, funded by the German NSF (DFG).

Users Review

From reader reviews:

Jacquelin Vasquez:

This Mineral Dust: A Key Player in the Earth System book is absolutely not ordinary book, you have after that it the world is in your hands. The benefit you receive by reading this book is actually information inside this publication incredible fresh, you will get information which is getting deeper you read a lot of information you will get. That Mineral Dust: A Key Player in the Earth System without we realize teach the one who examining it become critical in imagining and analyzing. Don't end up being worry Mineral Dust: A Key Player in the Earth System can bring once you are and not make your tote space or bookshelves' turn into full because you can have it in your lovely laptop even phone. This Mineral Dust: A Key Player in the Earth System having excellent arrangement in word along with layout, so you will not feel uninterested in reading.

Rosemary Lafleur:

Nowadays reading books be than want or need but also turn into a life style. This reading habit give you lot of advantages. Advantages you got of course the knowledge the actual information inside the book that improve your knowledge and information. The details you get based on what kind of e-book you read, if you want have more knowledge just go with schooling books but if you want sense happy read one using theme for entertaining such as comic or novel. The Mineral Dust: A Key Player in the Earth System is kind of guide which is giving the reader unstable experience.

Margaret Parker:

Many people spending their period by playing outside with friends, fun activity along with family or just watching TV all day long. You can have new activity to shell out your whole day by reading through a book. Ugh, you think reading a book can really hard because you have to take the book everywhere? It fine you can have the e-book, delivering everywhere you want in your Cell phone. Like Mineral Dust: A Key Player in

the Earth System which is obtaining the e-book version. So , try out this book? Let's view.

Jack Bemis:

As a scholar exactly feel bored to help reading. If their teacher asked them to go to the library or make summary for some reserve, they are complained. Just little students that has reading's soul or real their pastime. They just do what the professor want, like asked to go to the library. They go to right now there but nothing reading significantly. Any students feel that reading is not important, boring and can't see colorful photographs on there. Yeah, it is to get complicated. Book is very important to suit your needs. As we know that on this time, many ways to get whatever you want. Likewise word says, ways to reach Chinese's country. Therefore , this Mineral Dust: A Key Player in the Earth System can make you experience more interested to read.

Read Mineral Dust: A Key Player in the Earth System From Springer for online ebook

Mineral Dust: A Key Player in the Earth System From Springer Free PDF d0wnl0ad, audio books, books to read, good books to read, cheap books, good books, online books, books online, book reviews epub, read books online, books to read online, online library, greatbooks to read, PDF best books to read, top books to read Mineral Dust: A Key Player in the Earth System From Springer books to read online.

Online Mineral Dust: A Key Player in the Earth System From Springer ebook PDF download

Mineral Dust: A Key Player in the Earth System From Springer Doc

Mineral Dust: A Key Player in the Earth System From Springer Mobipocket

Mineral Dust: A Key Player in the Earth System From Springer EPub