

The Impact of Saharan Dust on the North Atlantic Circulation



Filesize: 9.2 MB

Reviews

This book will not be straightforward to start on studying but really fun to read. it absolutely was writtern really flawlessly and helpful. You can expect to like just how the writer write this publication.

(Glenna Goldner)

THE IMPACT OF SAHARAN DUST ON THE NORTH ATLANTIC CIRCULATION



To read **The Impact of Saharan Dust on the North Atlantic Circulation** PDF, make sure you refer to the hyperlink beneath and save the document or get access to additional information which might be related to THE IMPACT OF SAHARAN DUST ON THE NORTH ATLANTIC CIRCULATION book.

GRIN Verlag Mrz 2010, 2010. Taschenbuch. Book Condition: Neu. 296x210x8 mm. This item is printed on demand - Print on Demand Neuware - Doctoral Thesis / Dissertation from the year 2010 in the subject Geography / Earth Science - Meteorology, Aeronomy, Climatology, grade: Sehr Gut, University of Hamburg (Institute of Oceanography), language: English, abstract: The erosion of Saharan soil is the World's largest annual source of mineral dust aerosols, resulting in a deposition of more than 40% of the global atmospheric dust into the North Atlantic (NA). By changing the atmospheric opacity, mineral dust can alter the shortwave radiative forcing at the surface of the ocean, altering the ocean mixed layer heat budget and therefore affecting the sea surface temperature (SST). Moreover, changes of the total amount of energy received at the ocean surface have an impact on the ocean circulation. In this thesis we combine several satellite observations, in-situ radiation measurements, a 1D mixed layer model of the ocean, and various versions of a 3D general ocean circulation model, to study the impact of Saharan dust on the circulation of the NA. A buoyancy source generated by realistic dust-induced shortwave flux anomalies is imposed in the eastern NA and the differences between this simulation and an unperturbed one are investigated in terms of the ocean dynamical adjustment and changes in the Atlantic Meridional Overturning Circulation (AMOC). A joint analysis of aerosol optical depth retrievals from the MODIS sensor and SST from the TMI sensor for the period 2000-2006 shows a decrease in SST of 0.2° to 0.4°C simultaneously with, or shortly after, strong dust outbreaks, which is consistent with an independent estimate of SST decrease simulated by a local 1D mixed layer model. A comparison between observed TMI SST fields and simulated SSTs with an eddy-permitting model of the...



[Read The Impact of Saharan Dust on the North Atlantic Circulation Online](#)



[Download PDF The Impact of Saharan Dust on the North Atlantic Circulation](#)

Other eBooks



[PDF] DK Readers L4: Danger on the Mountain: Scaling the World's Highest Peaks

Click the hyperlink listed below to get "DK Readers L4: Danger on the Mountain: Scaling the World's Highest Peaks" PDF document.

[Read Book »](#)



[PDF] Help! I'm a Baby Boomer (Battling for Christian Values Inside America's Largest Generation

Click the hyperlink listed below to get "Help! I'm a Baby Boomer (Battling for Christian Values Inside America's Largest Generation" PDF document.

[Read Book »](#)



[PDF] Anna's Fight for Hope: The Great Depression 1931 (Sisters in Time Series 20)

Click the hyperlink listed below to get "Anna's Fight for Hope: The Great Depression 1931 (Sisters in Time Series 20)" PDF document.

[Read Book »](#)



[PDF] Sarah's New World: The Mayflower Adventure 1620 (Sisters in Time Series 1)

Click the hyperlink listed below to get "Sarah's New World: The Mayflower Adventure 1620 (Sisters in Time Series 1)" PDF document.

[Read Book »](#)



[PDF] Hitler's Exiles: Personal Stories of the Flight from Nazi Germany to America

Click the hyperlink listed below to get "Hitler's Exiles: Personal Stories of the Flight from Nazi Germany to America" PDF document.

[Read Book »](#)



[PDF] George's First Day at Playgroup

Click the hyperlink listed below to get "George's First Day at Playgroup" PDF document.

[Read Book »](#)