Dr. Andreas Hübner, Heinz-Alexander Fütterer
University Library, Team Research Data Management

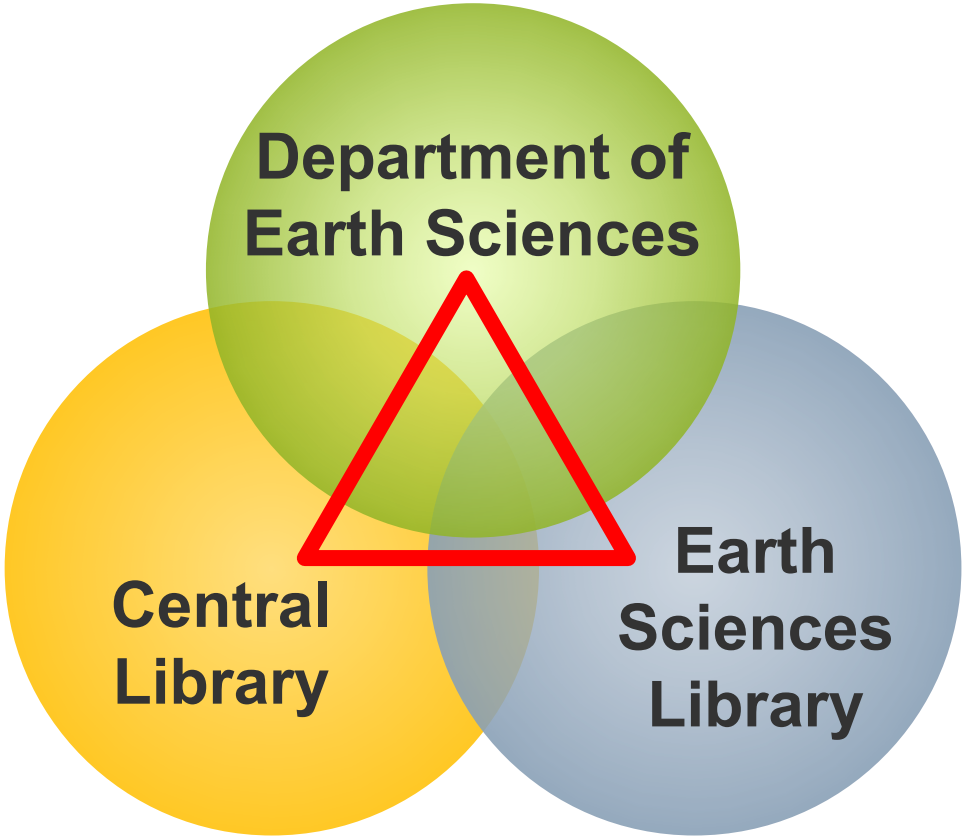
Freie Universität Berlin

Promoting FAIR and open data publication at the Department of Earth Sciences, Freie Universität Berlin

Research support

Freie Universität Berlin

- Open Access
- Research Data
- Regional/national networks
- Teaching services



- Information/ resources
- Aquisition
- Curriculum teaching
- Map collection

„Research data management“

43.000 Euro / 3 years

Seed money from Freie Universität Berlin central funds

A

- Increase awareness for RDM
- Support researchers in RDM in specific projects

B

- Increase visibility of research data produced at the Department of Earth Sciences

A

- Increase awareness for RDM
- Support researchers in RDM in specific projects

Advocacy for data publication

- climate data „Stadtmessnetz Berlin“
- satellite images Mars

Tender for RDM-staff

- December 2022

Data visualisation with the interactive web application Orbit Explorer	Student contract for work, 7 months
Support for RDM for atmospheric data from Citizen Science projects	Research assistant (E13, 25%) 6 months
Support for the open access publication of the software CHIC	Student contract for work, 5 months
Support for RDM of image and topography data	PhD student (E13, 50%) 6 months

Freie Universität Berlin

B

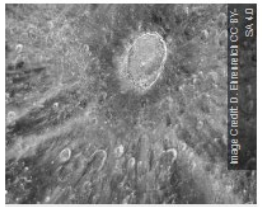
Website for published data

- Research data as „valuable asset" of the department
- Research data described in a generally understandable way

- Increase visibility of research data produced at the Department of Earth Sciences

Planetary data of terrestrial planets

Hydrometeorological data of Berlin



Geochemistry of impact rocks of the Moon

Late Bronze Age Landscape Changes (Prignitz, Northern Germany)

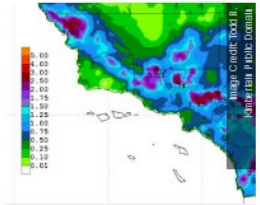
Geomorphology and the early human life II

Dust particles from agricultural fires

Formation of submarine canyons

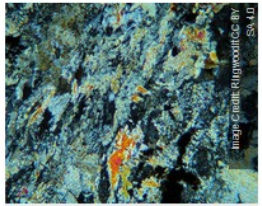
Hydrological conditions and the origin of modern man

Transformation processes and deformations of ocean rocks



Improving medium-term climate forecasts

Ritual practices and social organisation of the Middle Yayoi culture in eastern Japan



Seismic rock properties at earth's plate boundaries

Weblink:
https://www.geo.fu-berlin.de/en/forschung/forschungsdaten/Forschungsdaten-des-Fachbereichs/index.html

Dust particles from agricultural fires

Agricultural fire
Image Credit: U.S. Fish and Wildlife Service Public Domain

Fires not only introduce soot and other combustion products into the atmosphere, but also mineral dust particles from the ground. Just like desert dust, they also contribute to the total atmospheric dust load, but especially in areas heavily affected by fires. It is important to include this particular source of dust in climate models to better understand effects on the radiation budget and cloud formation.

However, the exact mechanism by which the dust particles enter the atmosphere during these fires has not been adequately studied. This, however, is essential for understanding the effects on the Earth system.

The data

The data set contains the most important wind field properties that can be used for subsequent numerical simulations (see here). In addition, the dependence of dust emission fluxes of two dust emission schemes used ("saltation" and "convective-turbulent dust emission") on changing ground surface properties such as soil type, soil moisture, and different roughness lengths is presented.

The data are sorted by their use in creating the figures in the associated journal article (see here). All data are available as netcdf files.

Publication of the data set: Wagner R (2021) https://doi.org/10.5281/zenodo.5205676

Research Results

In this study, the behavior of two common dust emission processes, saltation, (SALT) and convective-turbulent dust emission (CTDE), was investigated using models in the fire environment. It was found that, especially under low wind conditions, the direct input of dust particles by fire into the atmosphere (CTDE) is an important process. The second process, involving larger sand grains on the ground (SALT), becomes more important under strong wind conditions. However, the strength of the relative contribution of the two dust emission processes can vary significantly depending on wind speed, fire characteristics, and ground surface conditions.

Publication of journal article: Wagner R, Schepanski, K et al (2021) https://doi.org/10.1029/2020JD034355

Introduction

Data

Journal Article

Workflow


Draft text
(D, En)
Review
(Authors)
Publish
Interaction
library staff - researchers

Conclusions

1. Data publications are increasingly perceived as a valuable product of scientific work.

2. New potential user groups are addressed.

3. More awareness / more use of central research support services.

Thank you!

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