

# SHAPING THE FUTURE OF SCIENCE

TOWN  
HALL

WHAT DO I NEED TO KNOW  
ABOUT DATA JOURNALS?

TH027 – FRI 4 DEC 20, 7-8 PST

**AGU** FALL  
MEETING

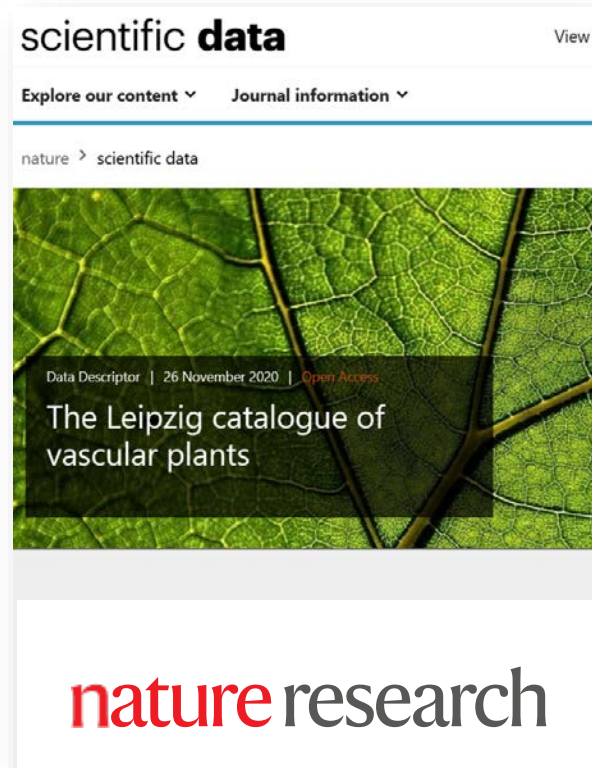
DAVD J CARLSON (CarlsonWorks)

KIRSTEN ELGER (GFZ German Research Centre for Geosciences)

PETER ARTHUR FOX (Rensselaer Polytechnic Institute)

ANDREW LEE HUFTON (Nature Publishing Group)

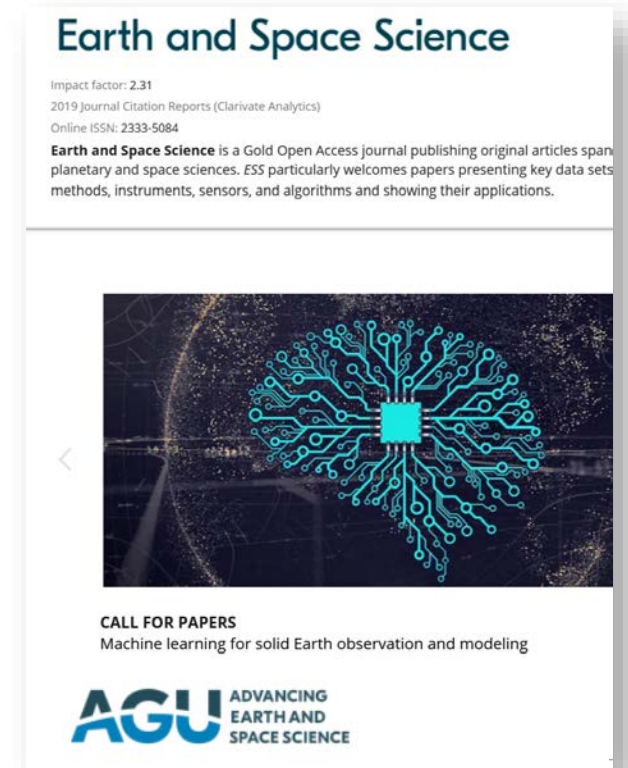
# Data Journals relevant for Earth and Environmental Sciences



**ANDREW LEE HUFTON**



**KIRSTEN ELGER  
DAVID J CARLSON  
JENS KLUMP, GE PENG**



**PETER ARTHUR FOX**

# A data description paper describes a data product and not the insights derived from data analysis

## Example: Global Carbon Budget 2019

### Primary Reference for Carbon Budget 2019

Earth System Science Data  
The data publishing journal

**Data Paper**

 [doi:10.5194/essd-11-1783-2019](https://doi.org/10.5194/essd-11-1783-2019)


Data description paper

### Global Carbon Budget 2019

Pierre Friedlingstein<sup>1,2</sup>, Matthew W. Jones<sup>3</sup>, Michael O'Sullivan<sup>1</sup>, Robbie M. Andrew<sup>4</sup>, Judith Hauck<sup>5</sup>, Glen P. Peters<sup>4</sup>, Wouter Peters<sup>6,7</sup>, Julia Pongratz<sup>8,9</sup>, Stephen Sitch<sup>10</sup>, Corinne Le Quéré<sup>3</sup>, Dorothee C. E. Bakker<sup>3</sup>, Josep G. Canadell<sup>11</sup>, Philippe Ciais<sup>12</sup>,

### Global Carbon Budget 2019

**Data Product**



article doi: [10.5194/essd-11-1783-2019](https://doi.org/10.5194/essd-11-1783-2019) [doi:10.18160/GCP-2019](https://doi.org/10.18160/GCP-2019)

data doi: [10.18160/gcp-2019](https://doi.org/10.18160/gcp-2019) (this page)

Citation: Global Carbon Project. (2019). Supplemental data of Global Carbon Budget 2019 (Version 1.0) [Data set]. Global Carbon Project. <https://doi.org/10.18160/gcp-2019>

### Additional Analyses for Carbon Budget 2019

nature climate change

**Research Paper**

Comment | Published: 04 December 2019

### Carbon dioxide emissions continue to grow amidst slowly emerging climate policies

G. P. Peters<sup>✉</sup>, R. M. Andrew, J. G. Canadell, P. F. A. Peregon

[doi:10.1038/s41558-019-0659-6](https://doi.org/10.1038/s41558-019-0659-6)

ENVIRONMENTAL RESEARCH LETTERS

**Research Paper**

PERSPECTIVE • OPEN ACCESS • FEATURED ARTICLE

### Persistent fossil fuel growth threatens the Paris Agreement and planetary health

R B Jackson<sup>1</sup>, P Friedlingstein<sup>2,3</sup>, R M Andrew<sup>4</sup>, J G Canadell<sup>5</sup>, C Le Quéré<sup>6</sup> and G P Peters<sup>4</sup>

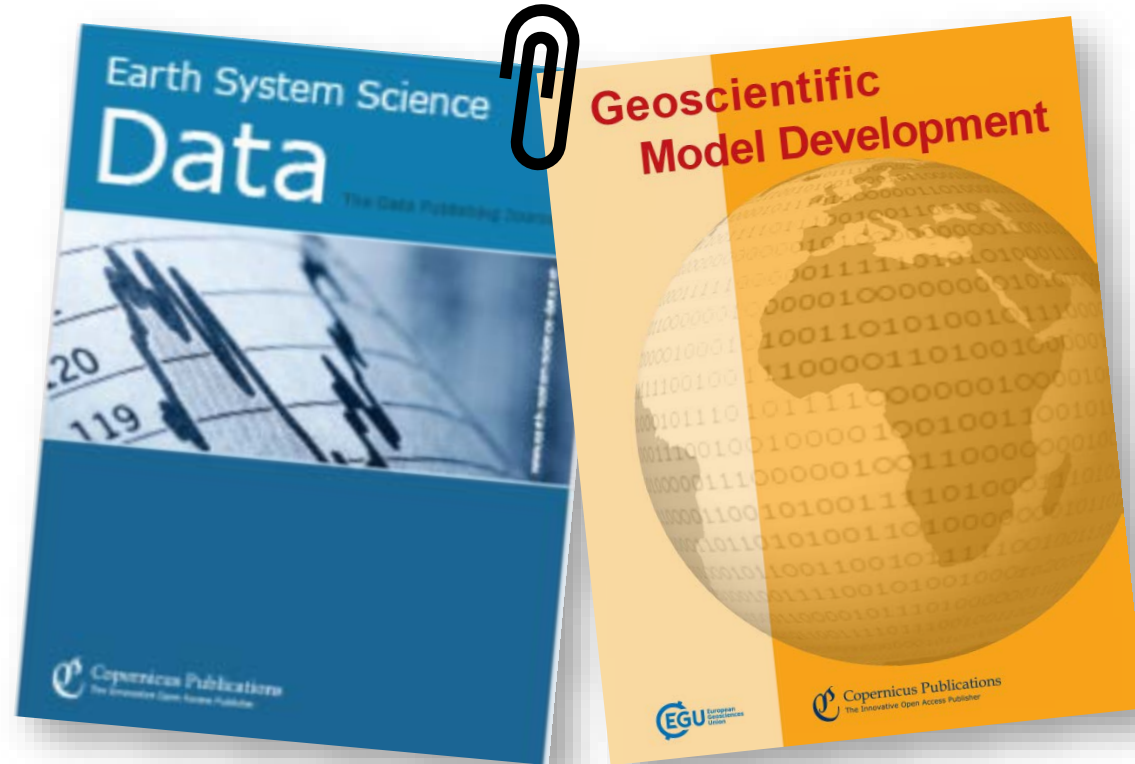
Published 4 December 2019 • © 2019 The Author(s)

[doi:10.1088/1748-9326/ab57b3](https://doi.org/10.1088/1748-9326/ab57b3)

A data description paper describes a data product and not the tool/ algorithm producing the data

*Example: „Benchmark datasets and machine learning algorithms for Earth system science data,, (joint Special Issue of ESSD and GMD)*

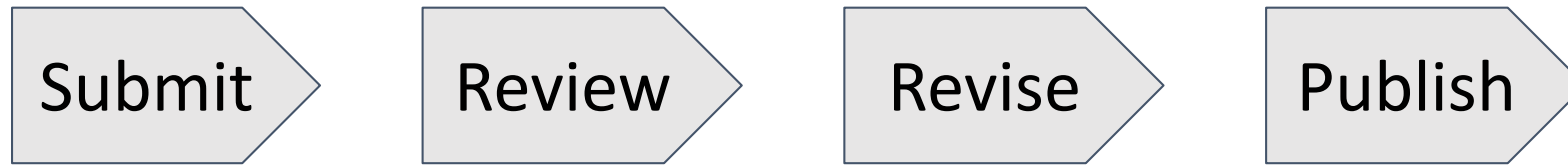
Description of benchmark data sets for machine learning (**focus: description of data products**)



Description of machine learning algorithms and (**focus: tool description**)

# Publishing in a data journal

*Share analysis & ideas through a research journal:*



*Share data through a data journal:*



Formats, licenses, metadata, file structures, composites, teasers, etc.

DOI, metadata, anonymous access, versions, etc.


data sources, uncertainties, validation, access instructions, etc.






















# Choosing an appropriate data license

 Preferred

 Allowed

























 Allowed in some cases

 Not allowed

	<u>Scientific Data</u>	<u>ESSD</u>	<u>Earth &amp; Space Science</u>
Public domain ( <u>CC0</u> , <u>PDDL</u> )			
Open database license ( <u>ODbL</u> )			
Attribution ( <u>CC BY</u> )			
Share-Alike ( <u>CC BY-SA</u> )			
Open source code licenses ( <u>MIT</u> )			
Non-commercial ( <u>CC BY-NC</u> )			
No derivatives ( <u>CC BY-ND</u> )			

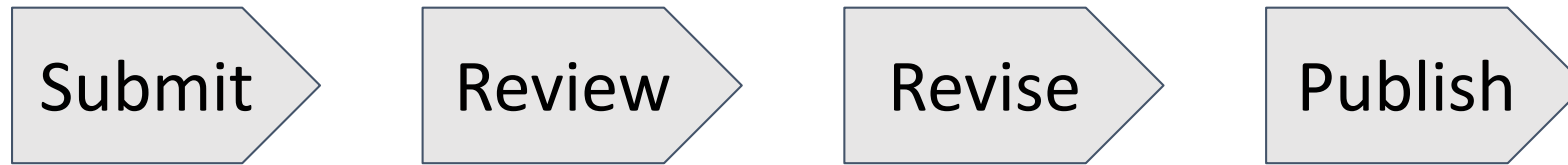
# Choosing an appropriate data repository

 Essential  
  Encouraged/ required in some cases  
  Allowed in some cases  
  Not allowed

	<u>Scientific Data</u>	<u>ESSD</u>	<u>Earth &amp; Space Science</u>
Adheres to all DOI functions & standards			
Easy no-cost curation			
Access or use barriers or restrictions			
Appropriate metadata services			
Long-term reliability			
Plan ahead: use domain repositories!			
Generic passwords for anonymous review			
Restricted for out-of-country researchers			

# Publishing in a data journal

*Share analysis & ideas through a research journal:*



*Share data through a data journal:*



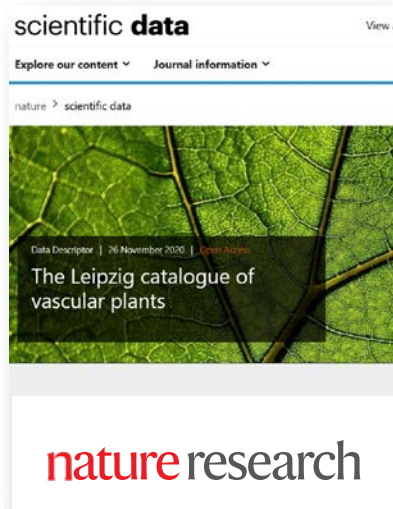
Formats, licenses, metadata, file structures, composites, teasers, etc.

DOI, metadata, anonymous access, versions, etc.

data sources, uncertainties, validation, access instructions, etc.



# Contact



**Andrew Lee Hufton**

[andrew.hufton@nature.com](mailto:andrew.hufton@nature.com)

**Breakout Meeting Space:**

[https://www.gotomeet.me/  
AndrewHufton/coffee-chat](https://www.gotomeet.me/AndrewHufton/coffee-chat)

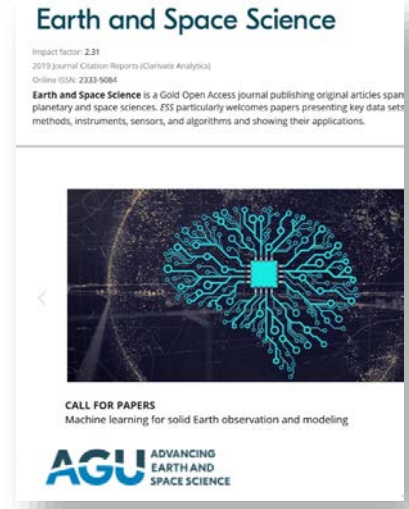


**Kirsten Elger**

[kelger@gfz-potsdam.de](mailto:kelger@gfz-potsdam.de)

**David J Carlson**

[ipy.djc@gmail.com](mailto:ipy.djc@gmail.com)



**Peter Arthur Fox**

[pfox@cs.rpi.edu](mailto:pfox@cs.rpi.edu)

**Breakout Meeting Space:**

[https://rensselaer.webex.  
com/meet/foxp](https://rensselaer.webex.com/meet/foxp)