

An Earth System Science Data Publishing Journal

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The Problem:

Scientific primary data are less thoroughly treated than the interpretations based on them Journals, e.g., Nature, see themselves unfit to subject data to their peer-review process[1]. Data repositories judge metadata quality and other technical parameters only, and generally do not have a recognized procedure for quality control of data content.

The bulk of scientific primary data is not made available for reuse - however valuable it may be - and not even preserved in too many cases.

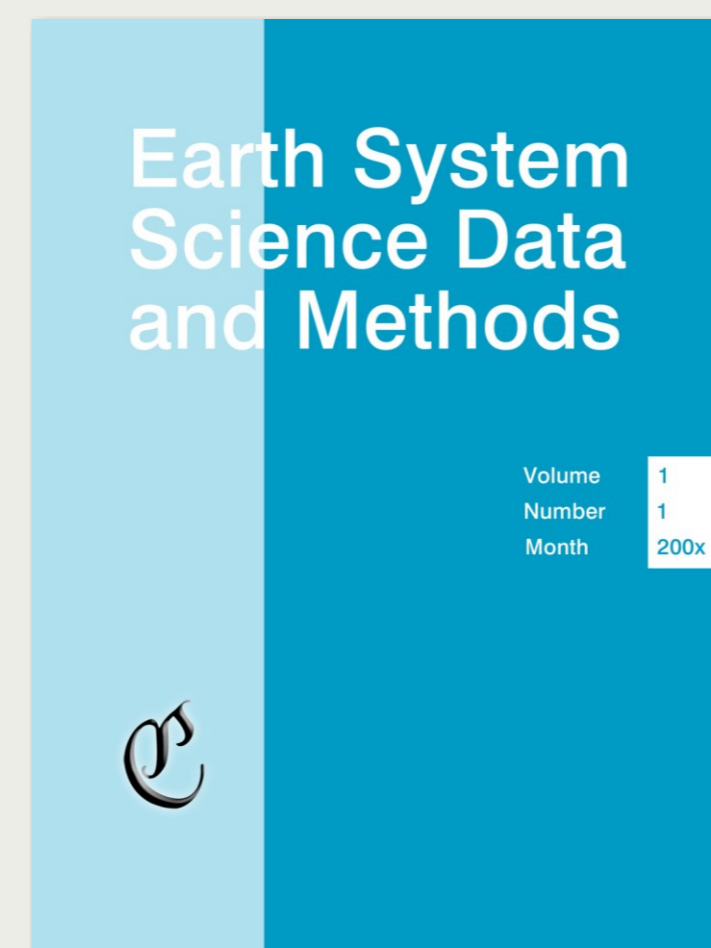
There are two main reasons for this behaviour:

- Scientists, who collected the data in arduous work, expect others *not* to recognize their "authorship" of data.
- Thoroughly publishing data for reuse needs additional work, which is not rewarded like the regular journal article in personal or institutional evaluations.

There is no „cultural norm“ in science for publishing and recognizing the value of primary data.

[1] E. Marris „Should journals police scientific fraud?“, Nature 439(2006), 520-521 | doi:10.1038/439520a

„Earth System Science Data and Methods“



This new journal, to be published by Copernicus Publications, will undertake to solve both problems by **applying well known procedures of peer review and publication to data.**

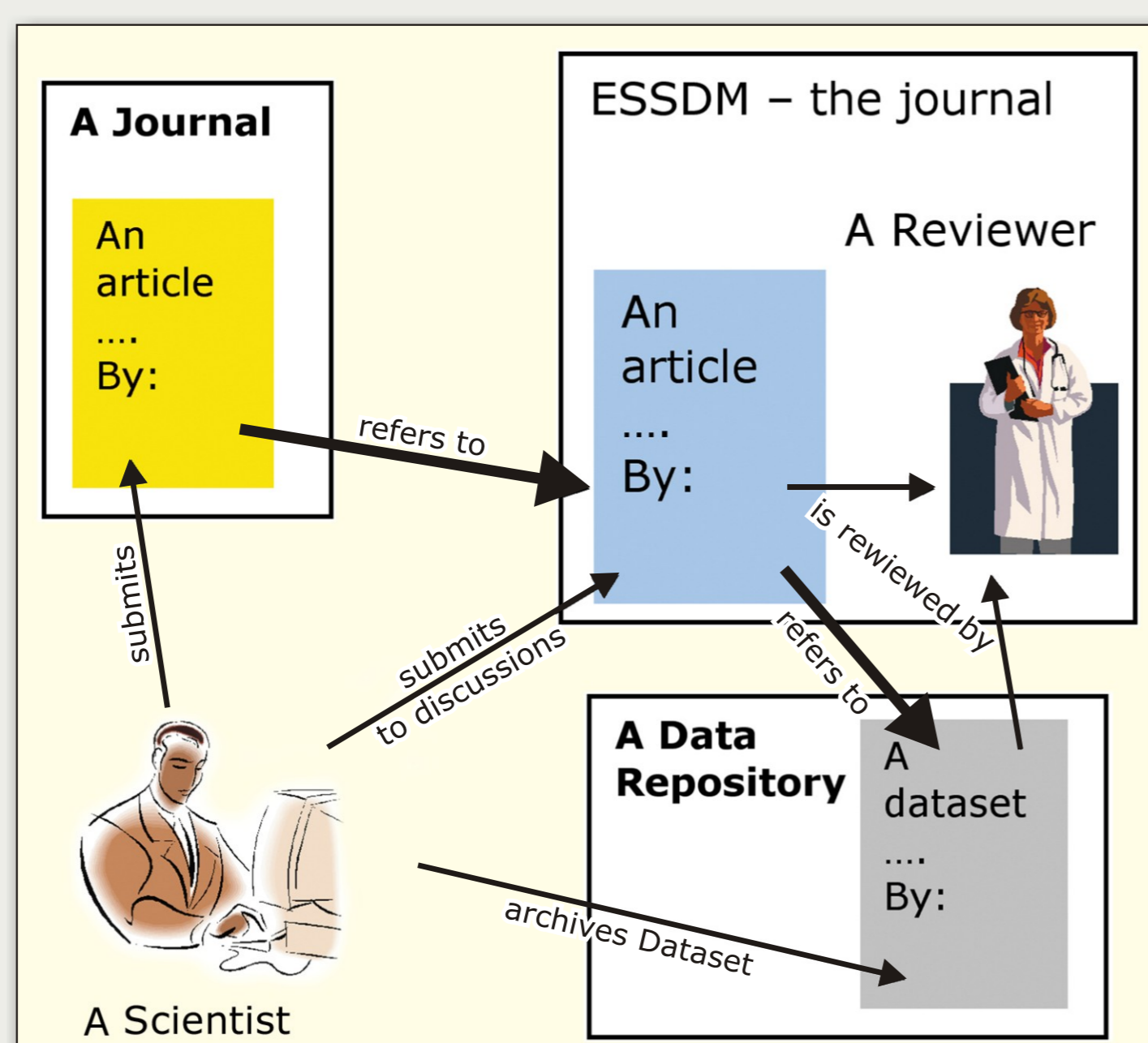
ESSDM will use Copernicus' well known and established two stage public discussion and peer review.

The journal and its publisher will not themselves hold the data but let authors **refer to the datasets in certified repositories using persistent identifiers.**

The editorial board will determine criteria for acceptance, which will certainly include completeness of **documentation, plausibility, useability and significance** of the dataset(s) being submitted.

Criteria and methods of review **may vary by discipline.**

Embedding Data Publishing in the Science Workflow



Result = Two peer reviewed publications (articles)

Conclusions

The build-up of a sound, global, multidisciplinary data infrastructure is needed as the **foundation of data driven science**, i.e.: reuse and new combinations of existing data. This is especially true of the Earth System Science, where it is needed, e.g. to **keep track of Global Change** or to find **correlations between (geo-) physical and ecological or economic dynamics.**

Peer review of data by a journal, analogous to review of traditional articles, as **an element of a science data infrastructure, will establish**

- a **baseline of quality, credibility and useability** for the **growing legacy of primary data**,
- a basis for a measurable impact of published data
- a traditional means **of recognition and reputation** for the contributing scientist and thus, **incentive to publish**

„Earth System Science Data and Methods“ will hopefully trigger more new developments and be **just the first data publishing journal**, providing a solution for the needs of science.

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Professor Dr. Jürgen Mlynek, President of the Helmholtz Association

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