



Towards an effective data peer review

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Peer review is an established procedure to ensure the quality of scientific publications and is currently used as a prerequisite for acceptance of papers in the scientific community. In the past years the publication of raw data and its metadata got increased attention, which led to the idea of bringing it to the same standards the journals for traditional publications have. One missing element to achieve this is a comparable peer review scheme.

This contribution introduces the idea of a quality evaluation process, which is designed to analyse the technical quality as well as the content of a dataset. It bases on quality tests, which results are evaluated with the help of the knowledge of an expert. The results of the tests and the expert knowledge are evaluated probabilistically and are statistically combined. As a result the quality of a dataset is estimated with a single value only. This approach allows the reviewer to quickly identify the potential weaknesses of a dataset and generate a transparent and comprehensible report.

To demonstrate the scheme, an application on a large meteorological dataset will be shown. Furthermore, potentials and risks of such a scheme will be introduced and practical implications for its possible introduction to data centres investigated. Especially, the effects of reducing the estimate of quality of a dataset to a single number will be critically discussed.