

EARTH OBSERVATION SYMPOSIUM (B1)  
Earth Observation Data Management Systems (4)

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CHARME: EARTH OBSERVATION METADATA AND THE SEMANTIC WEB

**Abstract**

The CHARMe (CHARacterization of Metadata) project aims to improve knowledge sharing in the climate sciences community in order to enable users of climate data to judge if data is fit for their purpose. The metadata associated with datasets is almost as important as the data itself, however currently it tends to focus on intrinsic characteristics of the data such as spatial and temporal resolution. CHARMe will enable users of a data provider's site to attach "commentary metadata" (Lawrence, B., Lowry, R., Miller, P., Snaith, H., Woolf, 2009) to the datasets as "annotations" that will go beyond the metadata typically associated with earth observation datasets. It will allow the climate science community to link datasets to publications that cite them, providing traceability between publications and the data that support them, as well as qualitative information, results of assessments, derived data products, and other information. CHARMe can also be used to drill down into datasets, and annotate subsets of data, for example to link data points to significant climate events. In doing so, it takes the raw data contained in climate datasets and attaches contextual information, increasing the utility of the data.

CHARMe will be an open system, enabling users of climate data to contribute their knowledge to the community, and to view contributions by others. CHARMe utilizes open standards for annotating data and will make use of "linked data" concepts in order to create a semantic web of information regarding climate science data based on the Open Annotation standard (World Wide Web Consortium, 2013). By providing an open, community driven system for annotating climate data, CHARMe aims to both provide a useful tool for climate scientists and data providers, as well as contribute to the emerging area of "climate services", which can be used to guide policy and decision making on climate matters. The CHARMe project is funded under the European Commission's FP7 program.

Lawrence, B., Lowry, R., Miller, P., Snaith, H., Woolf, A. (2009). Information in environmental data grids. *Philosophical Transactions of the Royal Society*, 367.

World Wide Web Consortium. (2013). Open Annotation Data Model. World Wide Web Consortium. Retrieved from <http://www.openannotation.org/spec/core/>