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Contextualization of visualizations of climate data

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The CHARMe project (http://www.charme.org.uk) is developing tools and approaches to allow users to contextualize climate datasets by linking them to publications, documents, datasets, and other related information (we call this "commentary metadata"). This allows users to benefit from the existing expertise accumulated within the community. In this presentation we describe how we enhance the visualization of climate data by combining interactive web-based visualizations with commentary information, enabling the user to see data in its full context.

Visualization tools satisfying the following specific use cases are currently being developed in the context of the CHARMe project:

- Plotting timeseries data alongside "significant events" that might affect the quality of the data. This tool is subject of a different abstract submitted by ECMWF.

- Visualization of climate data user's commentary related to a subset of a dataset. For many applications it is very useful to be able to provide commentary about specific geographic regions, time windows or even specific pixels within a dataset. For example: recording instances of poor data quality, inaccurate pixel classification or effects of cirrus cloud and sun-glint, etc. This tool is aimed mainly at scientific users and analysts who wish to understand climate datasets in detail, from new users who want to find out more about a feature found in a dataset to experts who want to record, disseminate and evaluate the results of their research work, especially when related to a specific area of the world. The development of this tool is based in existing projects developed at University of Reading, such as ncWMS and BlogMyData.

- Visual intercomparison of data and metadata, allowing synchronized interaction with several comparable climate datasets. This will assist users in judging which dataset is best fitted for their purpose as well as provide users with a better understanding of a dataset by measuring observational difference between datasets. This tool will focus on specific examples such as comparison of ESA's CCI SST and Cloud datasets, intercomparison of Climate Impact variables, and Obs4MIPS and CMIP5 data.

The presentation will briefly introduce the CHARMe project and explore in more detail the work undergone so far in the development of the tools mentioned above.