Enabling collaboration across communities through blogs and mashups

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The use of Web technologies to visualize and explore geoscientific data is now well-established (e.g. [1]). Many systems are now available, based upon standard approaches, to provide interactive online capabilities for publishing data, hiding much of the complexities of the underlying data and infrastructure. Recently, progress has been made in moving beyond simple visualization to enabling intercomparison of diverse datasets (e.g. [2]), supporting scientific work in model validation, data assimilation and other areas.

These systems typically lack an important feature, namely the ability of the user to contribute to the information on these sites, rather than simply acting as a consumer. We present early results from two recent projects that apply Web 2.0 and social networking techniques to enable collaborative geoscientific work on the Web in which user-contributed material is just as important as that provided by the central data providers.

"BlogMyData" combines an interactive online visualization system (Godiva2) with a sophisticated blogging engine, which was originally designed for laboratory chemists. Scientists use the blog to make comments on the visualizations they see, for example to hold discussions on particular features of interest, such as a potential problem with a numerical forecast model. The blog entries are geospatially tagged, meaning that comments can be discovered by location and time, enabling scientists to find new collaborators in similar areas of interest. A use case in climate reanalysis will be discussed.

"MashMyData" builds on previous work in online intercomparison systems by allowing users to upload their own data for automated intercomparison with other datasets. This brings complex datasets within the reach of new communities; for example, we shall demonstrate a particular use case in which an ocean geochemist employs the system to compare her own temperature proxy data (derived from coccolithophore studies) with physical measurements, which have hitherto been inaccessible due to the unfamiliarity of the data format used. The challenges inherent in supporting user-contributed data (including privacy and data format inconsistencies) will be addressed.

We shall conclude by discussing common findings from these projects, such as the need for tight controls over the access to user-supplied content and how users can share identities among multiple online collaboration systems.

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[1] Jon Blower, Keith Haines, Adit Santokhee, Chunlei Liu, Godiva2: Interactive visualization of environmental data on the web, Phil. Trans. Roy. Soc. A, 367, 1035-9, 2009

[2] A.L. Gemmell, G.C. Smith, K. Haines, J.D. Blower, Validation of ocean model syntheses against hydrography using a new web application, Journal of Operational Oceanography 2(2) August 2009, pp. 29-41