

Construction of publication and visualization package for geophysical fluid data using Ruby on Rails

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<http://ruby.gfd-dennou.org/>

We have been developing analysis and visualization libraries for geophysical fluid data for the object-oriented script language Ruby. They enabled us to handle data in a consolidated way independent of file format etc. However, it is still left to the users to find the data they need, which is not an easy task even in this network era, since geophysical data themselves have been increasing rapidly. To deal with this 'data storm' problem, it would be desirable to make use of database.¥

We are planning to develop a software package to construct data services by using Ruby on Rails (Rails hereinafter), and currently we are on a preliminary testing stage. Rails is a software framework to develop web applications that use relational databases. With Rails one can develop applications swiftly owing to its powerful prototyping and supporting libraries. Rails also offers AJAX and Web service functionalities. Since it is written in and for Ruby, the Ruby data analysis-visualization libraries can easily be incorporated.¥

Currently, we are planning to develop a package as follows:¥

- *Has a database of metadata of numerical data¥
- *Has a register system that scans self-descriptive files such as NetCDF to ease registering¥
- *Has a web-based user interface to analyze and visualize data on the server side.¥
- *Accepts limited scripts for flexible analysis¥
- *Easy to start a service for personal usages¥

The last point reduces learning costs if one uses a system both for personal and public data. We would like to further develop the package to realize cross data usage among servers.¥

It is not demanding to develop a specific site with Rails. The problem is how we can realize a flexible and comprehensive metadata databases. We expect discussion upon the presentation.