Toward geo-fluid simulation with the object-oriented language Ruby

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http://dennou-k.gfd-dennou.org/arch/ruby/index.htm

   Numerical simulations are widely used to study the atmosphere. Not only comprehensive general circulations models (GCMs) but also numerical models that are simpler than the GCMs in various degrees are used to 'understand' the atmosphere. There are, however, indefinite possible variations of such simple models. Therefore, it is important that the models are developed in a programming language which is suitable for rapid development.

   From this point of view, Ruby, which is a free object-oriented scripting language, has many excellent features. In this study, we have been developing basic libraries to facilitate numerical simulations with Ruby. We are also developing numerical models as their applications. So far, we have ported Ruby to Fujitsu vpp800 and are developing a two-dimensional fluid model on a sphere. In our talk, we will present benchmarks and how Ruby can make programming of numerical models easier.