

Quasi-realtime forecast using global nonhydrostatic icosahedral atmospheric model for the observation plan on the Earth Simulator.

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The Earth Simulator was once top ranked in "TOP500" supercomputers between 2002 and 2004. Its third generation introduced in 2015 performs 32 times more FLOPS than the original one, and provides irreplaceable amount of computing resources to the earth science as well as many other fields. JAMSTEC manages and operates the Earth Simulator and supports its users with technical assistance. We run near real-time forecasts using global nonhydrostatic icosahedral atmospheric model (NICAM) on the Earth Simulator during field campaigns led by JAMSTEC. The close collaboration between in-situ observation and numerical simulation is one of major tasks of Marine Earth Informatics. In Pre-YMC (November - December 2015) campaign, we conducted real-time forecasts and provided the simulation results to the observational sites, including Research Vessel "Mirai", via internet. Now we are working on the field campaign "the Years of the Maritime Continent (YMC)" (July 2017 - July 2019). We make improvement in the simulation setups, execution procedures, and the job scheduling method to efficiently run the forecast system on the Earth Simulator under a close collaboration between the research division and the operational division. We aim for better performances of forecasts both in physical accuracy and in computational performance.

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