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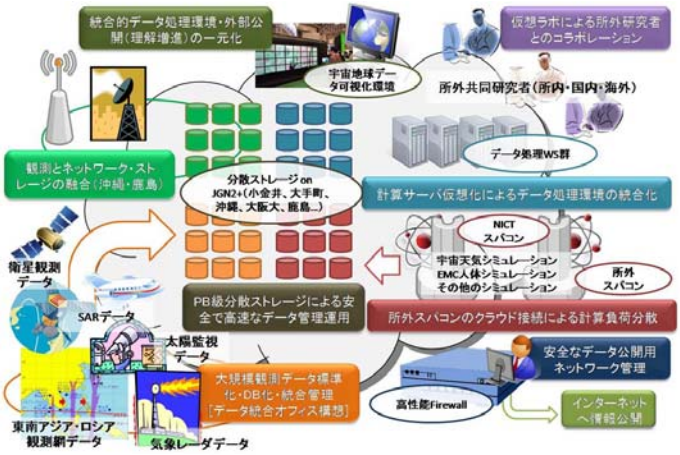
A report on informatics project of space weather at NICT: space weather cloud

Ken T. Murata[1*], Shinichi Watari[1], Hisao Kato[1], Yasuhiro Morikawa[1], Ken Sato[1], Chaoyuan Tsui[1], Kazunori Yamamoto[2], Eizen Kimura[2], Shinji Shimojo[1], Yutaka Kidawara[1], Koji Zettsu[1]

[1]NICT, [2]Ehime University



Main methodologies of Earth and space science (includig space weather) so far are theoretical, observational, and computer simulation-based approaches. Recently "informatics" is expected as a new (fourth) methodology. Informatics is a methodology to analyze large-scale data (observation data and computer simulation data) to obtain new findings using many data processing techniques. At NICT (National Institute of Information and Communications Technology) we are now developing a new research environment named the " Space Weather Cloud". The Space Weather Cloud is a cloud-computing environment based on informatics technologies; it provides many services for studies and out-reaches of space weather activities. The background resources are compused of visualization devices including tiled display wall (TDW), cluster workstations, a set of super computer (NEC SX-8R 7 nodes), licensed applications, database management system with a variety of data, and huge-scale distributed storage (Gfarm system) which are built on a high-speed network at NICT (JGN2+). General users make use of the space weather cloud services on our the e-SpaceWeather web site. Researchers who want to access inside-cloud system (OneSpaceNet) are expected to connect their computers through an SSH server on the cloud. If one has an access point to directly connect the JGN2+, he/she will have a benefit of high-speed accesses to our OneSpaceNet resources.

Keywords: space weather, cloud computing, informatics