
[EJ] Evening Poster | M (Multidisciplinary and Interdisciplinary) | M-AG Applied Geosciences

[M-AG32]Marine Earth Informatics

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In advancing the research of marine Earth science, observation and computer simulation is an essential element. In recent years, the performance of the observation apparatus is dramatically improved, along with the means of observation is diversified. It is becoming possible to observe in a resolution, which was not imaginable so far. Such data to be generated from the observation is tremendously large in quantity and its quality is drastically improved. To handle these huge and high quality dataset for data analysis, we need to have a high speed and large memory computer system but such a system now becomes within reach in our hands by the recent dramatic improvement of high performance computer system. On the other hand, researchers who can use this kind of large-scale computer in their studies are still quite limited. In this session, we try to review the situation of observation data that has undergone a dramatic change regarded with both quality and quantity in recent years of marine Earth science research. We also try to review the situation from a professional standpoint of simulation about the status of the high performance computer system to analyze these 'big data'. Also we focus on the state of the art data analysis technique and aim to share the outlook from the professional standpoint of computational science and professional position of observation science about the future direction of the marine Earth informatics research.

[MAG32-P07]Geological Evolution of JAMSTEC DARWIN Database

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Introduction: Japan Agency for Marine-Earth Science and Technology (JAMSTEC) archives data and samples obtained by its research vessels and submersibles. JAMSTEC archive is open for public users with scientific/educational purposes, as a common property of the human society [1]. For publicizing its data and samples online, JAMSTEC is operating NUUNKUI data sites, a group of several databases for various data and sample types [2]. JAMSTEC DARWIN database takes a central role of these data sites [3].

Database integration: DARWIN was originally designed for disseminating information for JAMSTEC cruises, submersible dives, and their observation data. Geosample information had been publicized at different databases; GANSEKI, deep sea rock sample database and COEDO, sediment core sample database. In 2017, these databases were integrated into a single system, the new DARWIN (sometimes referred to as DARWIN⁺). This upgrade includes newly implemented features, such as an interactive map-search function and expanded data-type flexibilities for geological sample associated data.

User-side usability: Besides the database integration reduced costs and labor for the server maintenance, it also provided several merits to users. Now they can search geological sample and cruise/dive information in a single data site. Some new datasets, such as onboard sample photos and surface close-up photos are already added to rock samples of several cruises. Geochemical data of sediment core samples will supposedly be added in the near future. The map-search function offers interactive map and sample thumbnail views in a single browser window. Major functions of previous systems are also still useful; users can perform the complex metadata search, by thumbnail browsing,

map area, keyword filtering, and metadata constraints.

Future plans: The 2017 upgrade created a drastic change for geosample data management and JAMSTEC data & sample team has been dealing with numerous minor issues for geosample data operation and reform of individual sample data. On the other hand, it is also working for upcoming 2018 upgrade that will include the implementations of online geosample request system and DOI (Data Object Identifier) related functions, and numerous minor improvements.

Reference: [1] http://www.jamstec.go.jp/e/database/data_policy.html

[2] <http://www.godac.jamstec.go.jp/jmedia/portal/e/>

[3] <http://www.godac.jamstec.go.jp/darwin/e/>