Application Layer in Science Data Systems: Case Study of "Digital Typhoon" and "2011 Great Tohoku Earthquake"

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This paper discusses methodology for the effective usage of science data systems using "application layer" as the keyword. The data itself is usually just a collection of numbers, and this is useful only for people who share the context of data such as how to read, process, and interpret numbers. The problem of context is critical not only for the general public, but also for researchers working in other domains. We claim that a science data system with improved accessibility and usability should have a well-designed application layer which offers context to read, process, and interpret data. We introduce two of our projects, namely "Digital Typhoon" and "2011 Great Tohoku Earthquake," to discuss how the application layer can be designed from the viewpoint of information architecture, data integration, information visualization, and social media.

Keywords: science data system, application layer, information architecture, data integration, information visualization, social media