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Earth Science Informatics, Special Issue – Semantic e-Science
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Science has fully entered a new mode of operation. E-science, defined as a combination of science, informatics, computer science, cyberinfrastructure and information technology, is changing how people in science disciplines conduct both individual and collaborative work. As e-Science flourishes and the barriers to data are being lowered, other more challenging questions are emerging, such as, “How do I use this data that I did not generate?” or “How do I use this data type, which I have never seen, together with the data I use every day?” or “What should I do if I really need data from another discipline but I cannot understand its terms?” As the volume, complexity, and heterogeneity of data resources grow, scientists increasingly need new capabilities that rely on “semantic” approaches (e.g., in the form of ontologies and vocabularies—machine encodings of terms, concepts, and relations among them) to help understand the meaning of data. The field of semantic e-Science fosters the growth and development of data-intensive scientific applications based on semantic methodologies and technologies, as well as related knowledge-based approaches. In recent years, semantic methodologies and technologies have been gaining momentum in e-Science areas such as solar-terrestrial physics, geology, ecology, oceanography, meteorology, and life sciences, to name a few. The developers of e-Science infrastructures are increasingly in need of semantic-based methodologies, tools, and middleware. This infrastructure will in turn facilitate scientific knowledge modeling, logic-based hypothesis checking, semantic data integration, application composition, integrated knowledge discovery and data analysis for different scientific domains, and building systems for use by scientists, students, and, increasingly, non-experts.

This special issue invites research papers that demonstrate how semantic methodologies and technologies are currently meeting scientific or engineering goals in Earth and space science domains. Papers should highlight the innovative designs, methods or applications associated with the semantic technologies. Review papers presenting state-of-the-art knowledge about a subject in semantic e-Science and methodology and software papers about a new algorithm or software package are also welcome. Authors should prepare their papers following the instructions for authors provided by Earth Science Informatics. Papers should be submitted on-line indicating the special issue “Semantic e-Science”. Authors may contact a guest editor about their intention to submit, including a short description of the intended submission. Earth Science Informatics is a widely indexed and circulated international journal: http://www.springer.com/earth+sciences+and+geography/journal/12145

Dates:
- Full papers due: Mar. 15, 2014
- End of the first review cycle: Jun., 2014
- End of the second review cycle: Aug., 2014
- Tentative publication date: Second half of 2014