



Utilizing Geoscientific Data and Tools for e-Science

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Global challenges require interdisciplinary solutions. A single data producer can not produce useful datasets and information without integrating data from others. This interdisciplinary nature of Earth sciences requires also interdisciplinary solutions for the complex problems in this field. Today, the current information technology is able to meet the requirements of interdisciplinary Earth science projects. In the past, solutions have been created for collecting, storing and accessing data, now it is a challenge to effectively share data, application and processing resources across many locations. While worldwide many e-Science and cyber-infrastructure initiatives are overcoming these challenges, there are still institutions and scientists who try to create own tool to analyze data and unfortunately waste time in duplicative efforts. However, it is better to reuse the functionality of existing systems in comparison to rebuilding them. Service-oriented technology can support strongly Earth sciences in this context. It is a practical and cost-effective solution for uniting information distributed between applications over operating system and language barriers. Turkey, as an earthquake country, has huge amount of geoscientific data provided by geodetic projects conducted over three decades. Rapid analyzing of these data and other continuous data which will be coming from the real-time GPS networks is increasingly becoming important for deformation monitoring and rapid hazard assessments. A general overview of the properties of a SOA-based system, alongside with accomplished applications and new developments is presented in this study.