Discussion on Earth Data Sharing Based on Geospatial Data Cloud

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With the fast development of space technology, earth data became irreplaceable in the fields of global changing and population-resources-environment. The aim of our work is to construct a platform named Geospatial Data Cloud (GSCloud) for Chinese scientists to easily access global earth and environment data as well as models.

Briefly speaking, our research includes two parts: I. Data Aggregation. A platform is developed to aggregate and integrate open earth and environment data resources which are distributed in various websites. We define necessary metadata elements for describing spatial and temporal properties of the data, and then by achieving the metadata-trapper activities we abstract the metadata from the websites. The GSCloud platform has realized the automatic metadata publishing process which includes getting metadata, adding metadata, updating metadata, deleting metadata and etc. II. Data Services. In this platform, a data search engine is developed for users to find the data according to their search queries. By inputting spatial and/or temporal information as search terms, scientists could efficiently retrieve out the matched earth data (the average search time is about 0.02ms). The platform supports the one-time retrieval of multiple remote sensing data. In addition, the search results could be overlaid as well as edited on the map with Web-GIS technologies. Up to now the GSCloud Platform has integrated 12TB data and has got 30,124 registered users.

According to the work, we find that the current display mode of the remote sensing data (especially that of multiple remote sensing data) fails to satisfy the user's demands. Our next work will focus on the 3D visualization display, which will enable users to compare the remote sensing data in a three-dimensional way.