

NEW CHALLENGE OF REMOTE SENSING DATA PROCESSING AND DISTRIBUTION FOR FUTURE EARTH OBSERVING SATELLITE SYSTEMS

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ABSTRACT:

With increasing numbers of Earth observing satellites in space, huge volumes of remote sensing data will be produced. Traditional remote sensing data processing and distribution methods may not be sufficient for various end users, including novice, intermeddle and advance user communities to efficiently use such datasets. Information and knowledge distribution with these data may help the data usage more efficiently. The Earth remote sensing data processing and distribution will face a new challenge. Maintaining the increasing volumes of data in forms that are readily accessible and that meet the needs of very diverse user communities presents intellectual challenges that are at least the equal of the challenges of building and launching hardware into space. Information distribution may be as important as data distribution. The following issues may be crucial for wider usage of the Earth observing remote sensing datasets: 1. Huge data volumes; 2. Complex data formats, such as, HDF (Hierarchical Data Format) and HDF-EOS (Hierarchical Data Format Earth Observing System); 3. Different map projections; 4. Geographic information system (GIS) applications; 5. Communication protocol and capability; and 6. Processing time. Customized real-time remote sensing data with GIS/Web-GIS compatible formats may become very important for a lot of end users. End users need to obtain Earth observing remote sensing data in more useful forms. On the other hand, more widely distributed Earth observing remote sensing data in different formats through diversified protocols will result in better usage of future Earth observing satellite systems. To address these issues, data compressing and pre-processing (sub-setting and sub-sampling), data format conversing (easy accessing data format such as, GIS compatible format), GIS and Open GIS applications, and simple real time data processing for future Earth observing satellite systems will be discussed in the paper.

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