
A Multi-Granularity Approach for Adaptive Mass Vector Dataset Access and Transmission

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Abstract

Online large volume vector data access and transmission is a crux for many GIS related applications. In this paper, a concept of granularity is introduced and a multi-granularity based pyramid model for large volume vector data generalization is set forward. A virtual vector-raster-vector conversion process is utilized to generate pyramid vector snapshots to avoid overlaps and gaps which may emerge with geometric generalization under current object-relational representation frameworks for vector data. Granularity value is associated with display resolution and different representation layers are selected online according to the display scale. It is argued the presented approach can rationally reduce the data volume transmitted online and keep the visualization and querying effects.
