

Abstract

DISTRIBUTED SYSTEM-BASED CONCURRENT CONSTRUCTION METHOD FOR MASSIVE DEM PYRAMID TILES

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The present invention discloses a distributed system-based concurrent construction method for massive DEM pyramid tiles. The method comprises the following specific steps: acquiring metadata of a DEM to be segmented; establishing a DEM local coordinate system; segmenting the DEM into several tiles that may be concurrently calculated; calculating Maxzoom; setting
10 the width and height of an output tile, a coordinate system, and a sampling algorithm; and performing segmentation computation on a distributed input tile by means of each computing node; merging the cell values of the same key on each computing node; merging cells of the same key on different computing nodes to output a plurality of key/Value pairs; correcting the edge elevation value of the tile by using an eight neighborhood algorithm; and taking the output
15 list <Key, Tile> of the previous level as input, circularly calculating the width and height data of the zoom and tile of the next level, segmenting, sampling and merging on each computing node, and outputting the tile of the next level until the circulation is ended.

(Fig. 1)