

Object Oriented Road Dection from Google Earth Imagery

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Nowdays, extracting road network from high-resolution RS imagery has become a hotspot. However, the high price of remote sensing images, especially restricts this application in many fields. Google Earth (GE) is a popular free software for browsing satellite images on the Web^[2], which provides a considerable number of high- resolution satellite images. This article describes the method of extracting roads using GE imagery, and compared and analyzed the extracted results with QuickBird (QB) images.

Compared with the homologous QB images, GE images have essentially the same spatial resolution, but because of correction, uniform color, projection, stitching, compression and other processing, there are some differences between the two such as number of bands, quantitative Level, and position precision.

The method of object-oriented road extraction in this paper mainly includes four steps: image segmentation, establishment of class rules and object classification, road object extraction and editing, and result output. The experiment result in this paper shows that object-oriented method can extract most main roads of the test region completely and highly available. Compared with the original QB image, GE image can also gain a similar main road region based on object-oriented method, with basically the same segmentation parameters and rules of classes establishment, except for only individual thresholds need change depending on the image characteristics.

Using GE images to extract road goals and road network information could eliminate much cost for purchasing remote sensing images, and could be widely applied to the less positional accuracy demanding areas, such as planning, traffic surveys and navigation, etc.

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