AUTOMATIC MOSAICING METHOD FOR LARGE BLOCK OF ORTHOIMAGES

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ABSTRACT:

For mosaicing neighboring and partly overlapping images of a scene into one large image, the paper proposes a large block orthoimages mosaicing method. In our method, seam lines firstly are delineated through overlap areas among orthoimages according to an optimal geometrical criterion. Then a network of mosaicing is built based on these delineated seam lines, and related topology information may be easily abstracted from the mosaicing network. In the second stage of our method, each seam line is optimized again by a modified snake algorithm. The algorithm makes every seam line meet the requirements of maximum color similarity of the images and maximum texture similarity. In order to searching an optimal seam line in a large overlap area as fast as possible, a hierarchical strategy is adapted. In that way, an optimized path through the overlap area is found, where the color and texture of the two images are similar. The still remaining jumps in hue and the differences in intensity and saturation have to be leveled by smooth interpolation in the vicinity of the seam line. After having processed all overlapping areas, a large block of orthoimages are automatically merged to final large image.

TOPIC: Image processing and pattern recognition
ALTERNATIVE TOPIC: Remote sensing applications