THE REGISTRATION OF 3-D MODEL AND 2-D IMAGE USING POINT AND LINE FEATURES

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ABSTRACT:

Space registration of 2-D images and 3-D models is an important task for geoinformation applications. Space registration connects the spatial relationship between the image space and object space. It can be implemented by using different control entities like control points, control lines, control surfaces, etc. 3-D models provide both point and line features. Hence, we establish a procedure to determine the image orientation by integrating these features. The objective of this investigation is to combine the point and linear features in space registration. The proposed scheme utilizes collinearity equations in determining the orientation. In this investigation, we compare three kinds of collinearity equations. The first one is a point-based formulation. The second one is line-based equations. The third one is a collinearity model that combines the point and line features. The test data include a simulation data, an aerial image and a close-range image. The experimental results indicate that the proposed scheme is flexible and reliable.

TOPIC: Data fusion and data assimilation
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