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Detection of Road Blockage Areas after Earthquake Disaster in Mountainous Districts Using Aerial Images

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ABSTRACT: In a large-scale earthquake, it is important to understand road conditions over a wide area to establish vehicular and evacuation routes. We propose a method of detecting road-blockage areas in mountainous districts. We use satellite images taken before the disaster and aerial images taken after the disaster. We detect damaged areas by comparing the two images and the digital elevation model (DEM). Then, we detect road-blockage areas using connectivity relationships between the damaged areas. Finally, we project the results onto the digital map. We analyzed actual images to evaluate the effectiveness of our method.

Key Words: Earthquake, Road-blockage, Aerial Image, Satellite Image, Digital Map, Digital Elevation Model