<!DOCTYPE html>

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<head>

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<h1>3D change detection in urban point cloud based on the developed Octree method using variance index&nbsp;</h1>

<p>One of the most important and new research fields in photogrammetry and remote sensing is 3D change detection in point cloud data, which has various applications such as crisis management and updating geographic information systems. Research has been done in this field and has led to the presentation of methods with high accuracy. One of these methods is based on the structure of Octree. In this method, 3ِِD changes are detected by fitting planes to the points of each section and calculating the angle between these planes. The purpose of this study is to evaluate and develop the Octree method for 3D change detection. In the suggested method, first in the preprocessing stage, the data are prepared to enter the algorithm and the variance index of points of each section is calculated, then by calculating the similarity of the data and applying a suitable threshold on it, 3D changes are detected. In this method, two point clouds data obtained from mobile mapping in two different years have been used. The obtained results show the superiority of the proposed method in terms of detection accuracy.&nbsp;</p>

<p style="text-align: center;">AKS6 &nbsp; &nbsp; &nbsp; &nbsp; &nbsp; &nbsp; &nbsp; &nbsp; &nbsp; &nbsp; &nbsp; &nbsp; &nbsp; &nbsp; &nbsp; &nbsp; &nbsp; &nbsp; &nbsp; &nbsp; &nbsp; &nbsp; &nbsp; &nbsp; &nbsp; &nbsp; &nbsp; &nbsp; &nbsp; &nbsp; &nbsp; &nbsp; &nbsp; AKS7</p>

<p style="text-align: center;">AKS8&nbsp; &nbsp; &nbsp; &nbsp; &nbsp; &nbsp; &nbsp; &nbsp; &nbsp; &nbsp; &nbsp; &nbsp; &nbsp; &nbsp; &nbsp; &nbsp; &nbsp; &nbsp; &nbsp; &nbsp; &nbsp; &nbsp; &nbsp; &nbsp; &nbsp; &nbsp; &nbsp; &nbsp; &nbsp; &nbsp; &nbsp; &nbsp; &nbsp; &nbsp; &nbsp;AKS9&nbsp;</p>

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