**Suggested Topics**: New Generation Sensors and Application (LiDAR) and Data Processing (Automatic Feature Extraction)

**Paper Title:** Automatic Road Extraction from Airborne Light Detection and Ranging data using Segmentation Based Filtering and Triangular Irregular Network based Segmentation

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**Abstract**

LiDAR is the powerful Remote Sensing Technology for the acquisition of 3D information from terrain surface.It provides a new approach for acquiring road information. This paper proposes a method for automated road extraction from airborne Light Detection and Ranging (LiDAR) data. The method combines Segmentation Based Filtering (SBF) with Triangular Irregular Network-based segmentation to extract the road points. The method contains two major steps.  Firstly, Segmentation Based Filtering (SBF) is applied to LiDAR data for initial segmentation of road regions after detecting outliers. Secondly, road extracted by the SBF method is refined through the help of Delaunay Triangular Network based segmentation and then, road contour is extracted from road point image. For the experimental validation, the proposed and existing method is tested against ISPRS reference dataset. When compared with adaptive TIN method, experimental results showed that proposed method improves total completeness and correctness measures from 60.35% to 84.49% and 66.81% to 83.80%.

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