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PROGRESSIVE DENSIFICATION AND REGION GROWING METHODS FOR LIDAR DATA CLASSIFICATION

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Abstract. At present, airborne laser scanner systems are one of the most frequent methods used to obtain digital terrain elevation models. While having the advantage of direct measurement on the object, the point cloud obtained has the need for classification of their points according to its belonging to the ground. This need for classification of raw data has led to appearance of multiple filters focused LiDAR classification information. According this approach, this paper presents a classification method that combines LiDAR data segmentation techniques and progressive densification to carry out the location of the points belonging to the ground. The proposed methodology is tested on several datasets with different terrain characteristics and data availability. In all case, we analyze the advantages and disadvantages that have been obtained compared with the individual techniques application and, in a special way, the benefits derived from the integration of both classification techniques. In order to provide a more comprehensive quality control of the classification process, the obtained results have been compared with the derived from a manual procedure, which is used as reference classification. The results are also compared with other automatic classification methodologies included in some commercial software packages, highly contrasted by users for LiDAR data treatment.

[Conference Paper](#) (PDF, 955 KB)

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