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Int. Arch. Photogramm. Remote Sens. Spatial Inf. Sci., XXXVIII-5/W12, 109-114, 2011

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doi: 10.5194/isprsarchives-XXXVIII-5-W12-109-2011

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## DETECTION OF ROAD CURB FROM MOBILE TERRESTRIAL LASER SCANNER POINT CLOUD

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Keywords: road furniture, curb, street floor, sidewalk, eigenvalue, surface normal, edge detection

**Abstract.** The detection of different road furniture such as curb, street floor and sidewalk from point clouds is important in many applications such as road maintenance and city planning. In this paper a pipeline for point cloud processing to detect the road curb from unorganized point clouds captured from a mobile terrestrial laser scanner is proposed. The proposed pipeline utilizes a covariance-based procedure to perform a 3D segmentation of point clouds. Features such as the road curb can be extracted by analyzing the local neighborhood of every point. This is done by computing the surface normal direction and the normalized eigenvalues. These parameters can be used to extract the ground objects, such as curb, street floor and sidewalk. The curb can be isolated from the rest of the ground objects based on the previous parameters in addition to elevation gradient within the local neighborhood. A 2D image processing scheme is also presented to find the curbs as edges in a generated 2D height image. The results show successful detection rates of 78% and 94% using 3D and 2D approaches respectively.

[Conference Paper](#) (PDF, 4134 KB)

Citation: El-Halawany, S., Moussa, A., Lichti, D. D., and El-Sheimy, N.: DETECTION OF ROAD CURB FROM MOBILE TERRESTRIAL LASER SCANNER POINT CLOUD, Int. Arch. Photogramm. Remote Sens. Spatial Inf. Sci., XXXVIII-5/W12, 109-114, doi:10.5194/isprsarchives-XXXVIII-5-W12-109-2011, 2011.

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