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Panoramic rendering-based polygon extraction from indoor mobile LiDAR data

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Abstract. In this paper, we propose a method for panoramic point-cloud rendering-based polygon extraction from indoor mobile LiDAR data. Our aim was to improve region-based point-cloud clustering in modeling after point-cloud registration.

First, we propose a pointcloud clustering methodology for polygon extraction on a panoramic range image generated with point-based rendering from a massive point cloud. Next, we describe an experiment that was conducted to verify our methodology with an indoor mobile mapping system in an indoor environment. This experiment was wall-surface extraction using a rendered point-cloud from 64 viewpoints over a wide indoor area. Finally, we confirmed that our proposed methodology could achieve polygon extraction through point-cloud clustering from a complex indoor environment.

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