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Visualization of Mobile Mapping Data via Parallax Scrolling

D. Eggert and E. C. Schulze
Institute of Cartography and Geoinformatics, Leibniz Universität Hannover, Hanover, Germany

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Abstract. Visualizing big point-clouds, such as those derived from mobile mapping data, is not an easy task. Therefore many approaches have been proposed, based on either reducing the overall amount of data or the amount of data that is currently displayed to the user. Furthermore, an entirely free navigation within such a point-cloud is also not always intuitive using the usual input devices. This work proposes a visualization scheme for massive mobile mapping data inspired by a multiplane camera model also known as parallax scrolling. This technique, albeit entirely two-dimensional, creates a depth illusion by moving a number of overlapping partially transparent image layers at various speeds. The generation of such layered models from mobile mapping data greatly reduces the amount of data up to about 98 % depending on the used image resolution. Finally, it is well suited for the panoramic-fashioned visualization of the environment of a moving car.