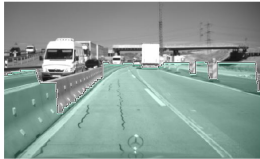
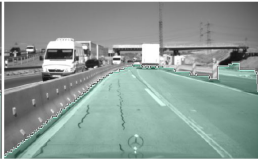


B-Spline Modeling of Road Surfaces with an Application to Free Space Estimation

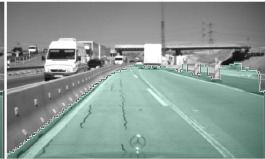
A. Wedel, H. Badino, C. Rabe, H. Loose, U. Franke and D. Cremers (TITS 2009)



Free space with edge based score.



Free space with disparity based score.



Free space using the combined approach.

- ▶ Planar road surface assumption is not modeling slope changes and cannot be used to restrict the free space
- ▶ Representation of the visible road surface based on general parametric B-spline curve
- ▶ Surface parameters are estimated from stereo measurements in the free space and are tracked over time using a Kalman filter
- ▶ Adopt a road-obstacle segmentation algorithm to use the B-spline road representation
- ▶ Evaluation on recorded data shows accurate free space estimation when the planar assumption fails