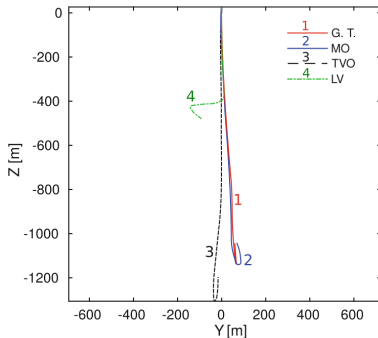
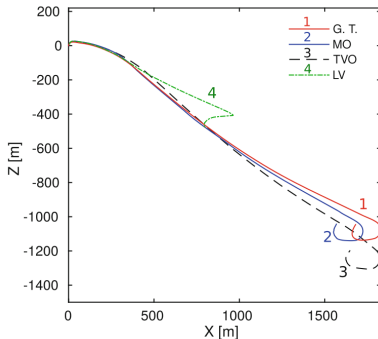


Fast Techniques for Monocular Visual Odometry

M. H. Mirabdollah, and B. Mertsching (GCPR2015)



- ▶ Real-time and robust monocular visual odometry
- ▶ Iterative 5-point method to estimate initial camera motion parameters within RANSAC
- ▶ Landmark localization with uncertainties using a probabilistic triangulation method
- ▶ Robust tracking of low quality features on ground planes to estimate scale of motion
- ▶ Minimization of a cost function:
 - ▶ Epipolar geometry constraints for far landmarks
 - ▶ Projective constraints for close landmarks
- ▶ Real-time due to iterative estimation of only the last camera pose (landmark positions from probabilistic triangulation method)
- ▶ Evaluated on KITTI visual odometry dataset