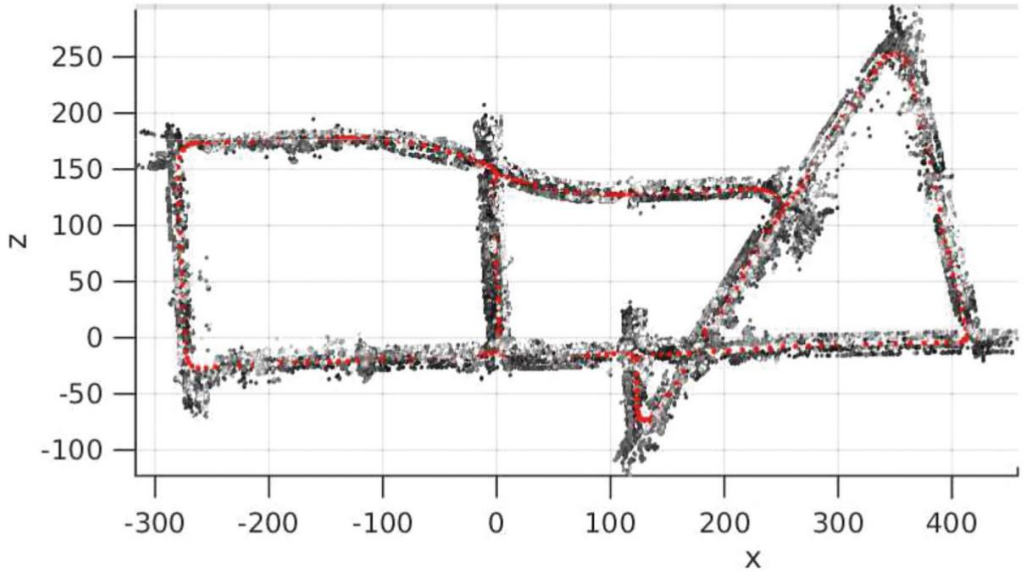
Stereo Visual Odometry Without Temporal Filtering

J. Deigmoeller and J. Eggert (GCPR 2016)



- Ego-motion estimation from stereo avoiding temporal filtering and relying exclusively on pure measurements
- Stereo camera set-up is the easiest and leads currently to the most accurate results
- Two parts
  - Scene flow estimation with a combination of disparity and optical flow on Harris corners
  - Pose estimation with a P6P method (perspective from 6 points) encapsulated in a RANSAC framework
- Careful selections of precise measurements by purely varying geometric constraints on optical flow measure
- Slim method within the top ranks of KITTI without filtering like bundle adjustment or Kalman filtering