

Supplementary Material to: OV²SLAM : A Fully Online and Versatile Visual SLAM for Real-Time Applications

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I. INTRODUCTION

This report contains figures of trajectories estimated in the experiment section of OV²SLAM paper [1]. We both provide results obtained on the training sequences of the KITTI dataset [2] and on the EuRoC dataset [3].

II. EUROC EXPERIMENTS

We compare the stereo version of ORB-SLAM [4] and OV²SLAM on the EuRoC dataset with real-time enforced. We show the trajectories obtained on the *Machine Hall* (MHXX) sequences in Figure 1 and on the *Vicon Room* (VX-XX) sequences in Figure 2.

We further display the trajectories estimated with the monocular version of OV²SLAM with real-time processing enforced in Figure 3 and Figure 4.

III. KITTI EXPERIMENTS

We display the trajectories obtained with both ORB-SLAM and OV²SLAM while enforcing real-time on the KITTI dataset in Figure 5.

REFERENCES

- [1] M. Ferrera, A. Eudes, J. Moras, M. Sanfourche, and G. Le Besnerais, "OV²SLAM : A fully online and versatile visual SLAM for real-time applications," *Under Review*, 2020.
- [2] A. Geiger, P. Lenz, and R. Urtasun, "Are we ready for autonomous driving? the kitti vision benchmark suite," in *2012 IEEE Conference on Computer Vision and Pattern Recognition*, 2012.
- [3] M. Burri, J. Nikolic, P. Gohl, T. Schneider, J. Rehder, S. Omari, M. W. Achtelik, and R. Siegwart, "The euroc micro aerial vehicle datasets," *The International Journal of Robotics Research*, vol. 35, no. 10, 2016.
- [4] R. Mur-Artal and J. D. Tardós, "Orb-slam2: An open-source slam system for monocular, stereo, and rgb-d cameras," *IEEE Transactions on Robotics*, vol. 33, no. 5, 2017.

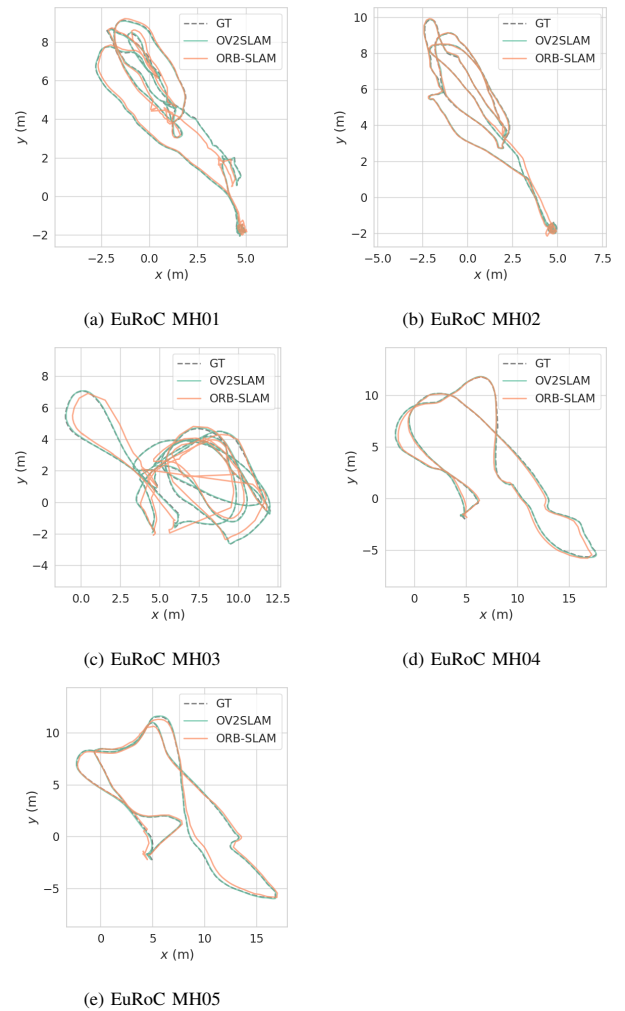
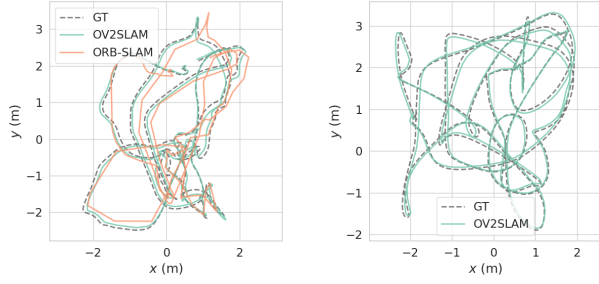


Fig. 1: Trajectories estimated with stereo OV²SLAM and ORB-SLAM in Real-Time on EuRoC Machine Hall (MHXX) sequences.

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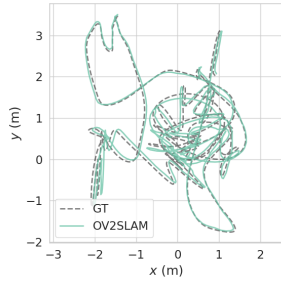
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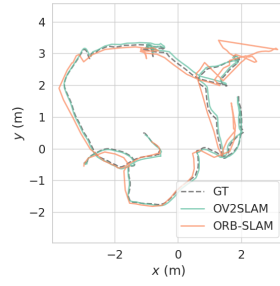


(a) EuRoC V1 01

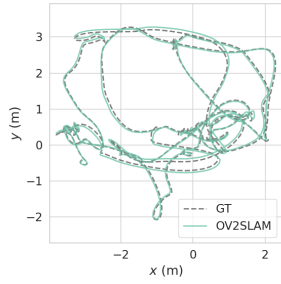
(b) EuRoC V1 02



(c) EuRoC V1 03

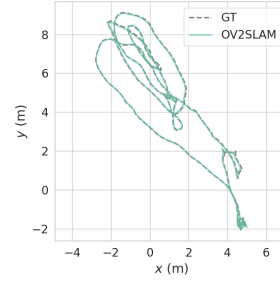


(d) EuRoC V2 01

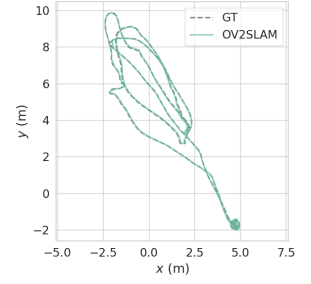


(e) EuRoC V2 02

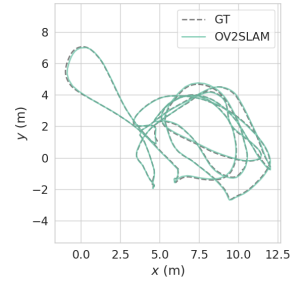
Fig. 2: Trajectories estimated with stereo OV²SLAM and ORB-SLAM in Real-Time on EuRoC Vicon Room (VX-XX) sequences.



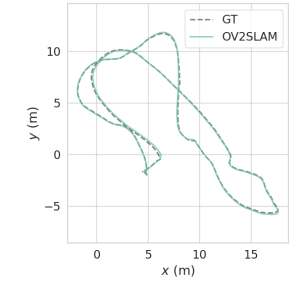
(a) EuRoC MH01



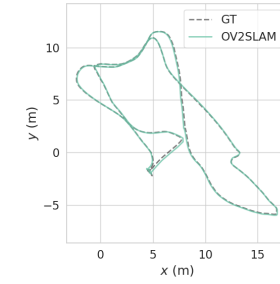
(b) EuRoC MH02



(c) EuRoC MH03



(d) EuRoC MH04



(e) EuRoC MH05

Fig. 3: Trajectories estimated with monocular OV²SLAM without LC in Real-Time on EuRoC Machine Hall (MHXX) sequences.

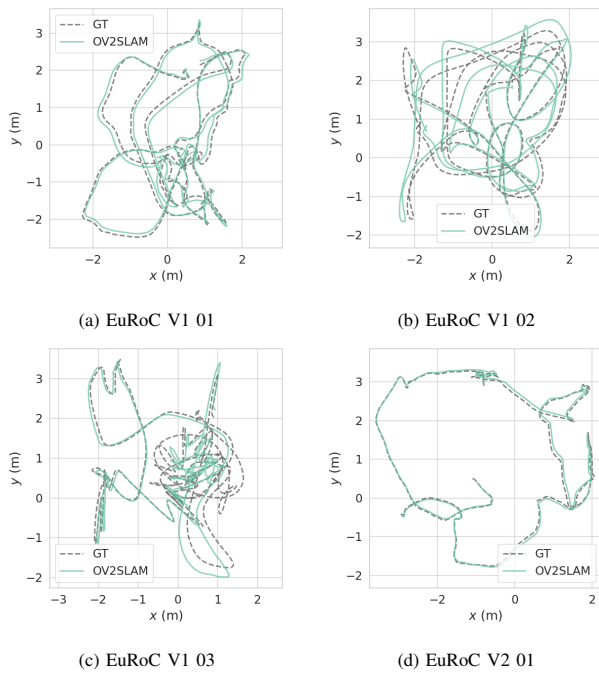
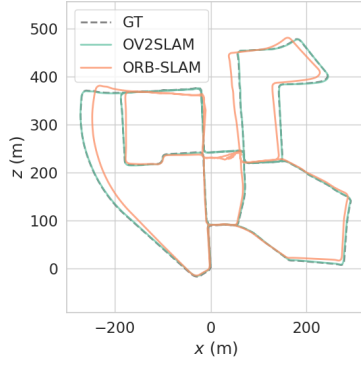
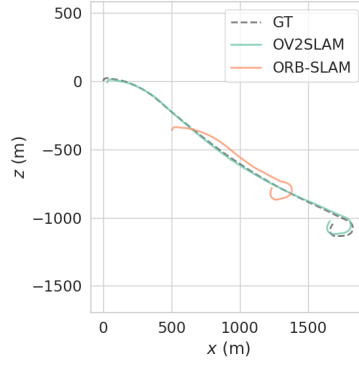


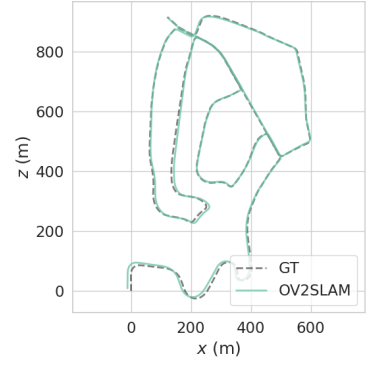
Fig. 4: Trajectories estimated with monocular OV²SLAM without LC in Real-Time on EuRoC Vicin Room (VX-XX) sequences.



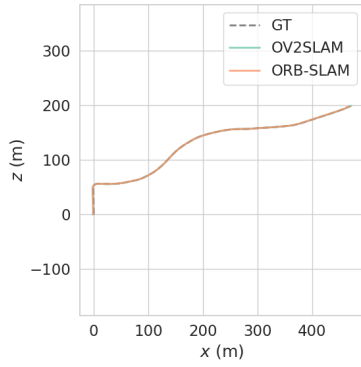
(a) KITTI 00



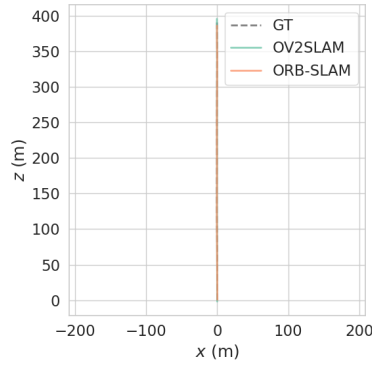
(b) KITTI 01



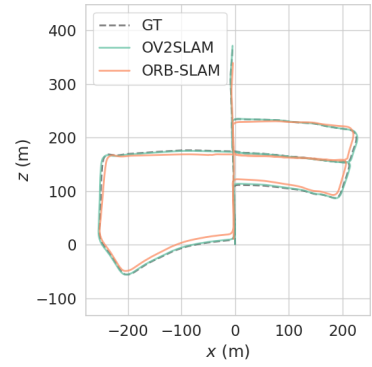
(c) KITTI 02



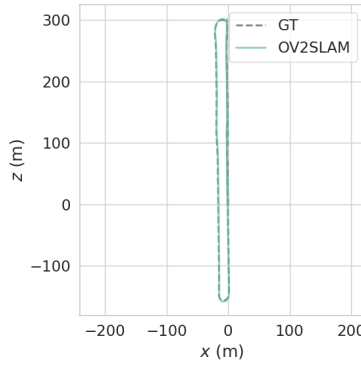
(d) KITTI 03



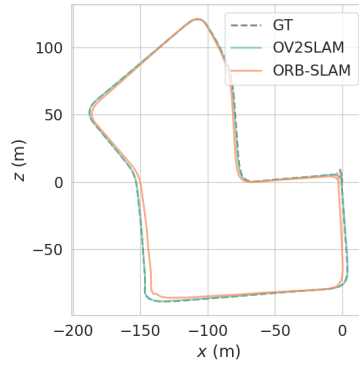
(e) KITTI 04



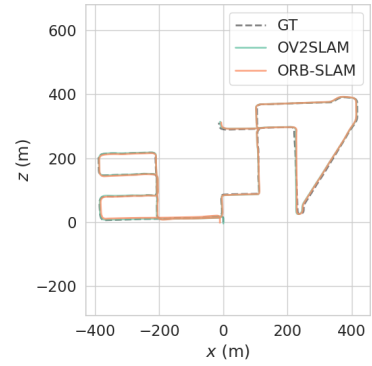
(f) KITTI 05



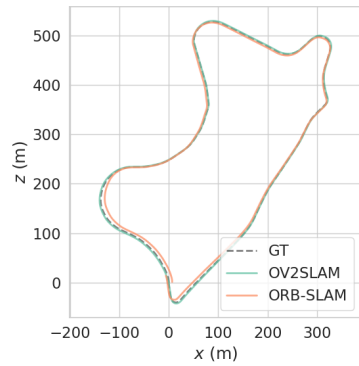
(g) KITTI 06



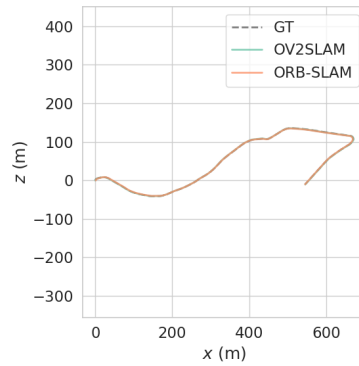
(h) KITTI 07



(i) KITTI 08



(j) KITTI 09



(k) KITTI 10

Fig. 5: Trajectories estimated with stereo OV²SLAM and ORB-SLAM in Real-Time on KITTI training set.