Supplementary Material to:
OV^{2}SLAM : 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 OV^{2}SLAM 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 OV^{2}SLAM 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 OV^{2}SLAM with real-time processing enforced in Figure 3 and Figure 4.

III. KITTI Experiments

We display the trajectories obtained with both ORB-SLAM and OV^{2}SLAM while enforcing real-time on the KITTI dataset in Figure 5.

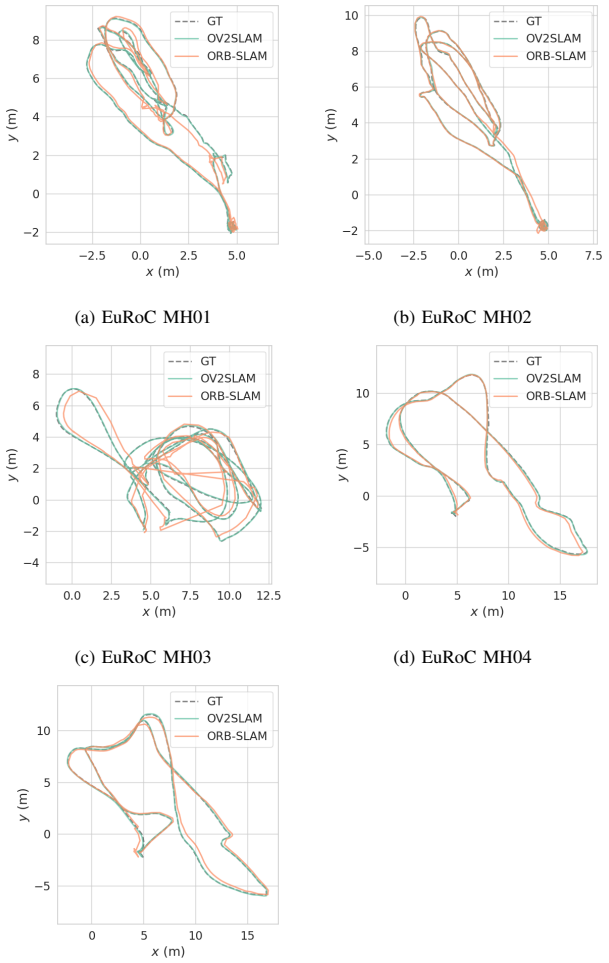
References

[1] M. Ferrera, A. Eudes, J. Moras, M. Sanfourche, and G. Le Besnerais, "OV^{2}SLAM : A fully online and versatile visual SLAM for real-time applications," *IEEE Robotics and Automation Letters*, 2021.

[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.



(a) EuRoC MH01

(b) EuRoC MH02

(c) EuRoC MH03

(d) EuRoC MH04

(e) EuRoC MH05

Fig. 1: Trajectories estimated in Real-Time with stereo OV^{2}SLAM and ORB-SLAM on EuRoC Machine Hall (MHXX) sequences.

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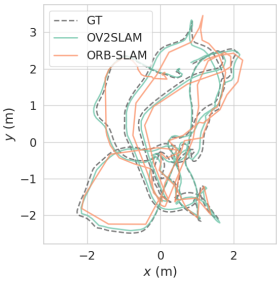
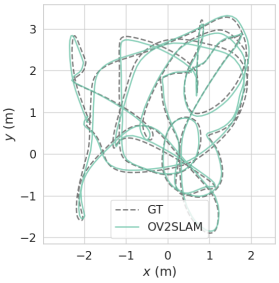
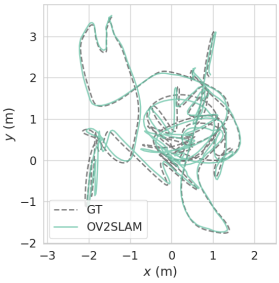
[†] work done while at ONERA.



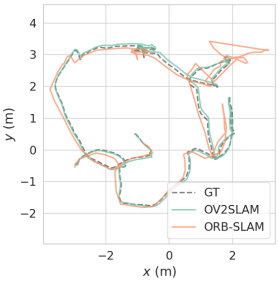
(a) EuRoC V1 01



(b) EuRoC V1 02



(c) EuRoC V1 03



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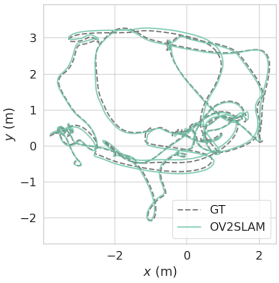
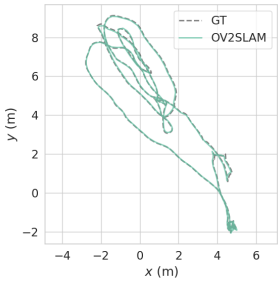
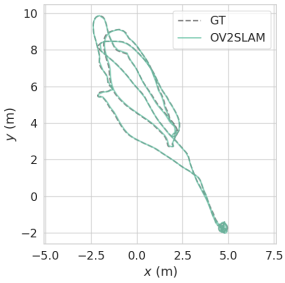


(e) EuRoC V2 02

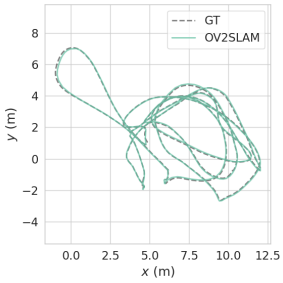
Fig. 2: Trajectories estimated in Real-Time with stereo OV^{2}SLAM and ORB-SLAM on EuRoC Vicon Room (VX-XX) sequences.



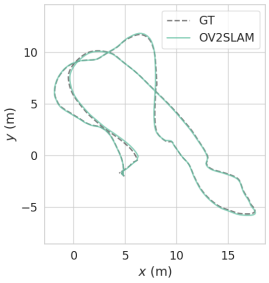
(a) EuRoC MH01



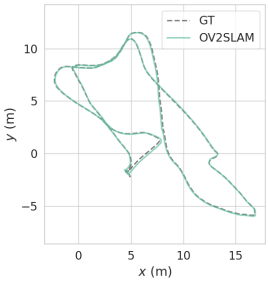
(b) EuRoC MH02



(c) EuRoC MH03

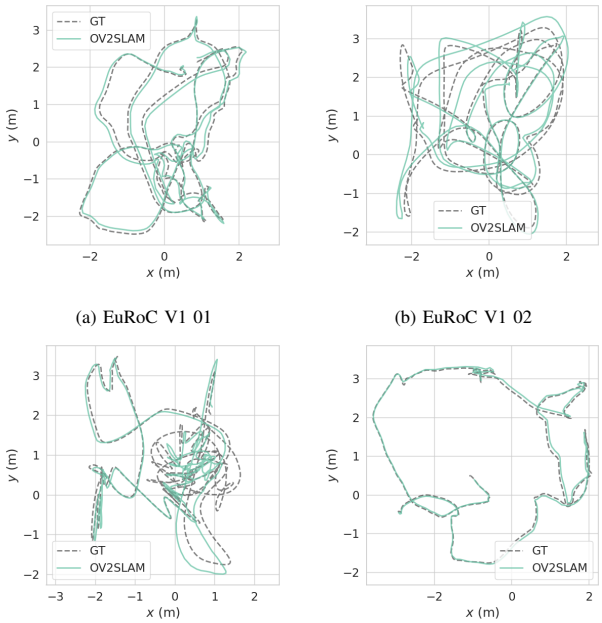


(d) EuRoC MH04



(e) EuRoC MH05

Fig. 3: Trajectories estimated in Real-Time with monocular OV^{2}SLAM without LC on EuRoC Machine Hall (MHXX) sequences.



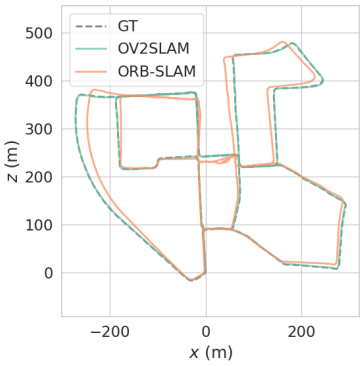
(a) EuRoC V1 01

(b) EuRoC V1 02

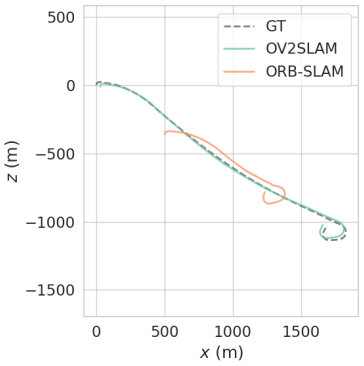
(c) EuRoC V1 03

(d) EuRoC V2 01

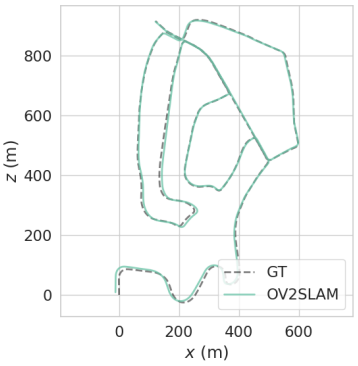
Fig. 4: Trajectories estimated in Real-Time with monocular OV^{2}SLAM without LC on EuRoC Vicon Room (VX-XX) sequences.



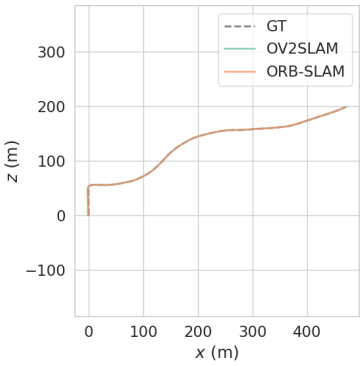
(a) KITTI 00



(b) KITTI 01



(c) KITTI 02



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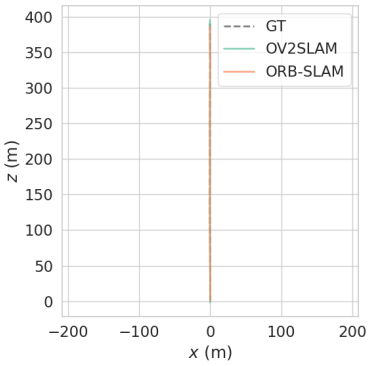
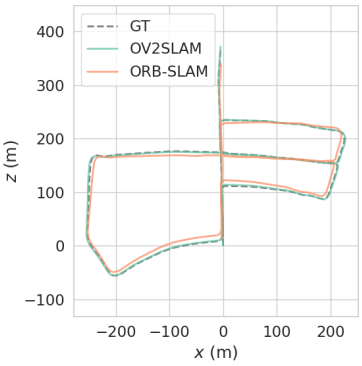
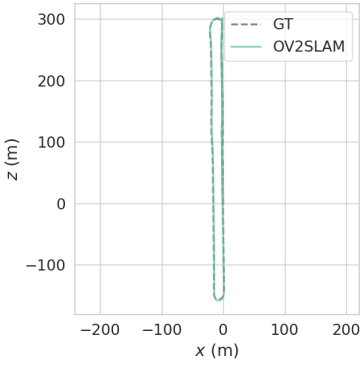


(e) KITTI 04



(f) KITTI 05



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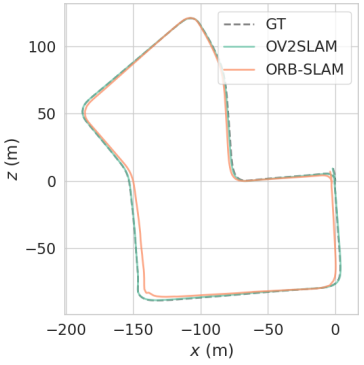

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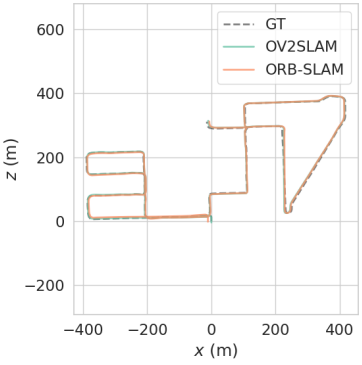
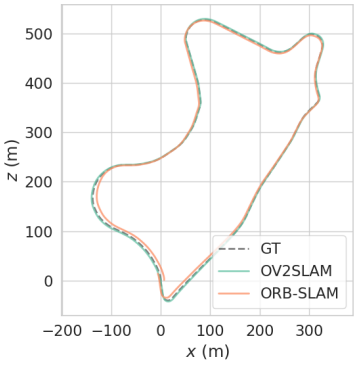


(i) KITTI 08



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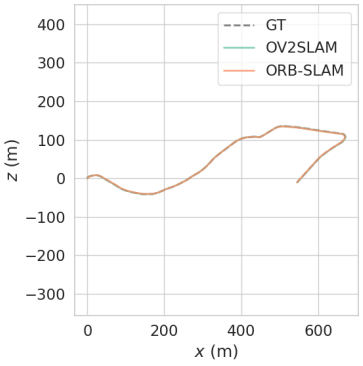

(k) KITTI 10

Fig. 5: Trajectories estimated in Real-Time with stereo OV^{2}SLAM and ORB-SLAM on KITTI training set.