In the simulation, we conduct an ablation study about the influence of feature replenishment threshold τ_{fr}. We use three trajectory tracking accuracy metrics: average lateral error (ALE), terminal error (TE), and normalized path difference area (NPDA). The details about these metrics refer to another supplemental material. The number of feature trajectory regeneration per length is also recorded. Outcomes of averages over all trajectory templates are included in Table 1 and Fig. 1

With smaller τ_{fr}, the performance of trajectory servoing becomes worse since it may servo with less number of tracked features. The control could be unstable and have oscillations. In contrast, if τ_{fr} is significantly large, trajectory servoing will more frequently trigger feature replenishment. Pose estimation errors could be involved to cause worse performance. Therefore, a number in between is the best choice for τ_{fr}. We used $\tau_{fr} = 10$ in all of our experiments.

Table 1: Raw data from ablation study of feature replenishment τ_{fr}

τ_{fr}	4	6	**10**	16	22	36	50
ALE	7.01	5.11	4.52	4.03	4.67	4.67	4.57
TE	14.08	9.97	**8.23**	8.53	9.73	9.53	10.47
NPDA	12.09	7.16	6.37	**4.96**	6.66	5.61	7.17
# of Reg/m	**1.4**	1.5	1.6	1.7	1.8	2.0	2.7

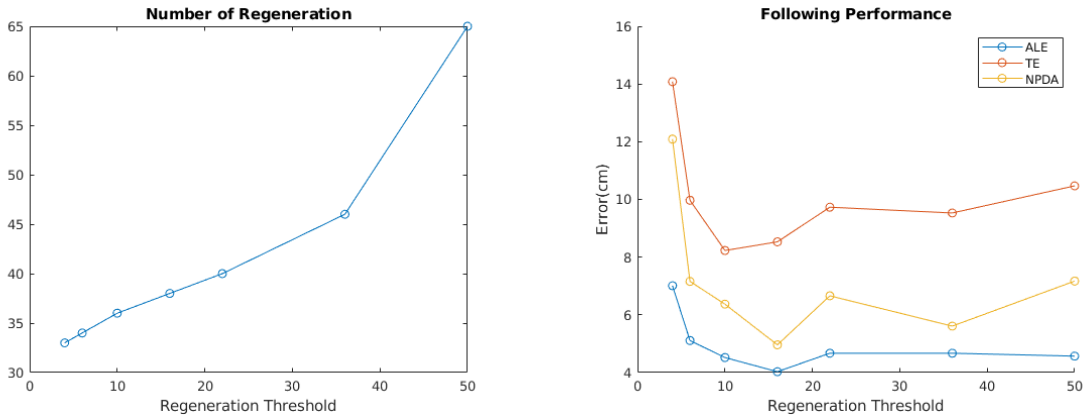

Figure 1: Ablation study plots of feature replenishment τ_{fr}