

## Comparison between RL and PID controller:

Comparison table of different metrics between the two controller methods:

Metric	PID Control	RL Control
Avg Distance to goal	0.023952	0.029838
Total Steps	60	67
Final Error	0.000466	0.00483
STD	0.031101	0.029998
Median	0.010532	0.017905

Generally, the PID controller was more accurate, was quicker to finish the task and took less steps to get to the goal, and as seen in practice it was overall the better controller in my case.

### Take aways:

**PID Controller** reduces the error gradually and consistently across many steps.

**RL Controller** typically shows a faster convergence in the early steps, suggesting that it can learn efficient trajectories to the goal.

Both methods eventually reduce the error below the threshold (1mm), but the **PID CONTROLLER** often does so in fewer steps.