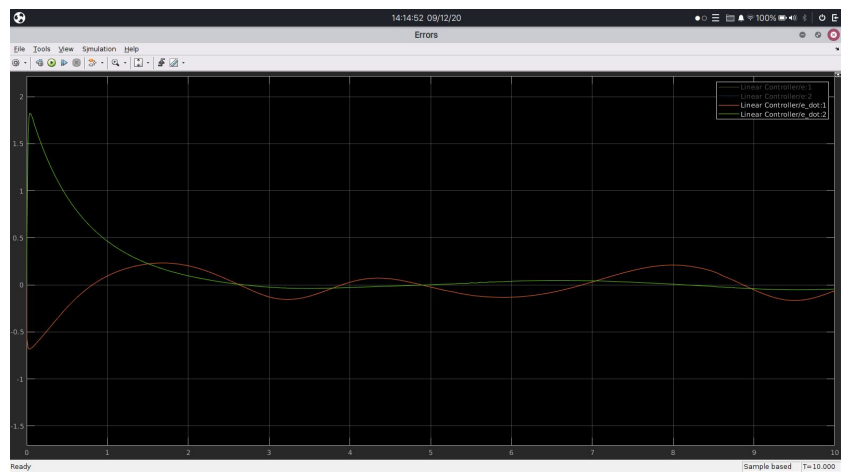
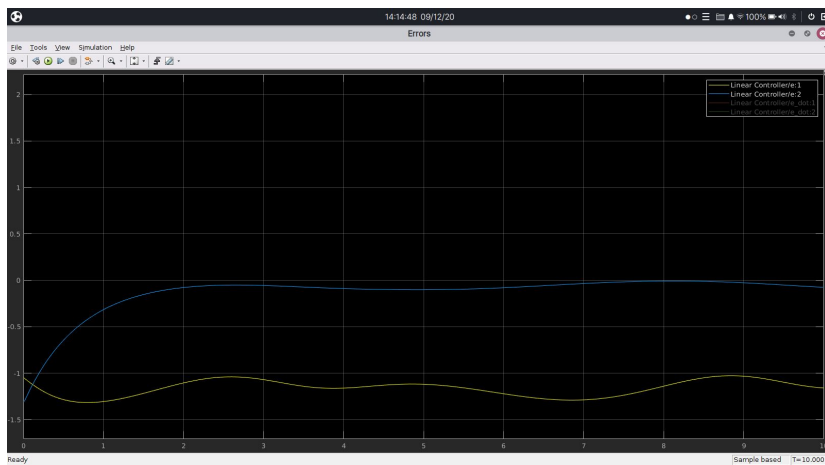
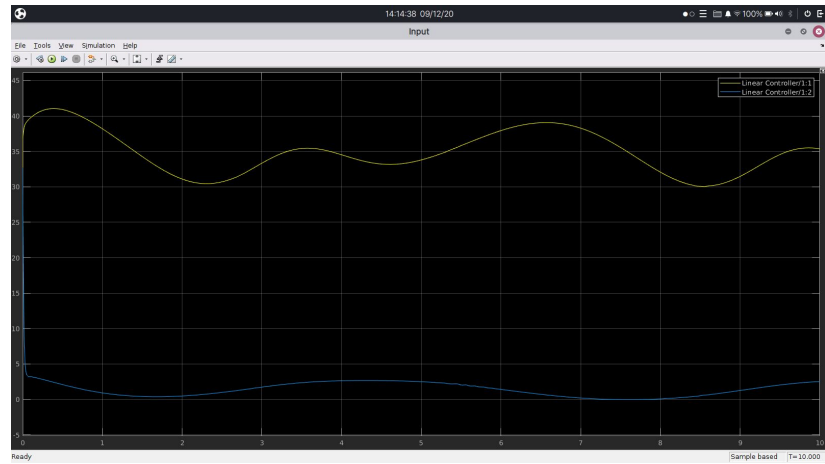
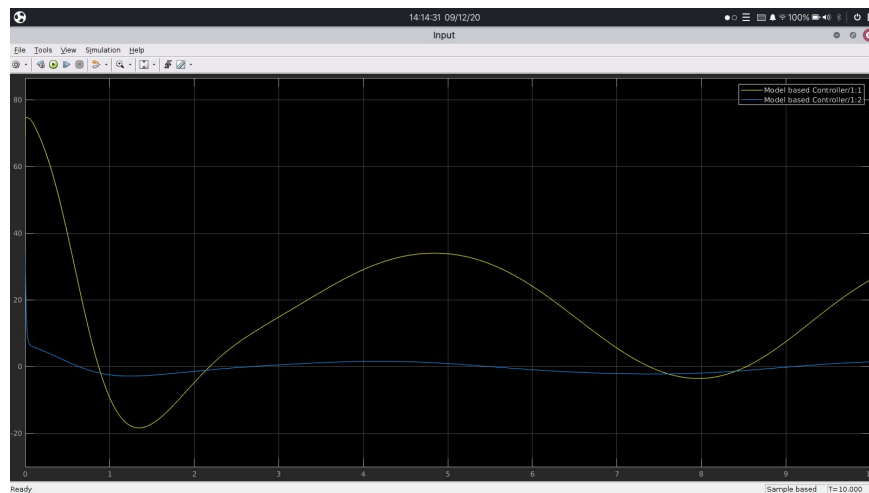
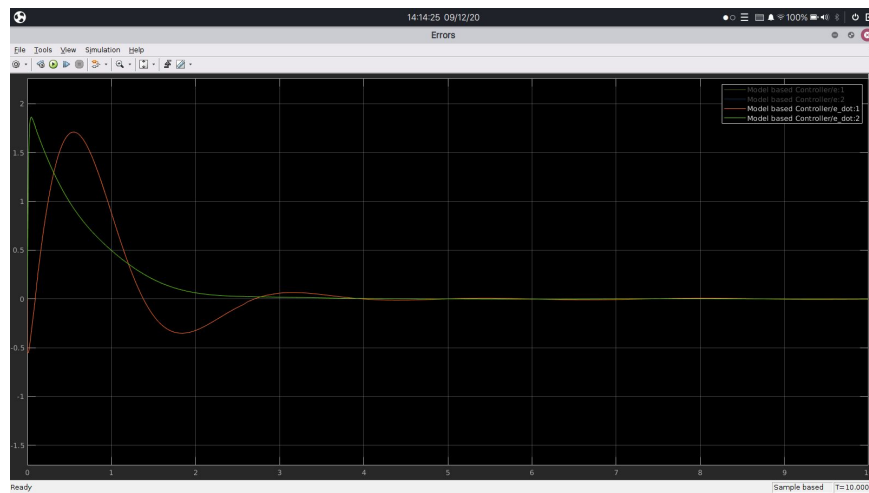
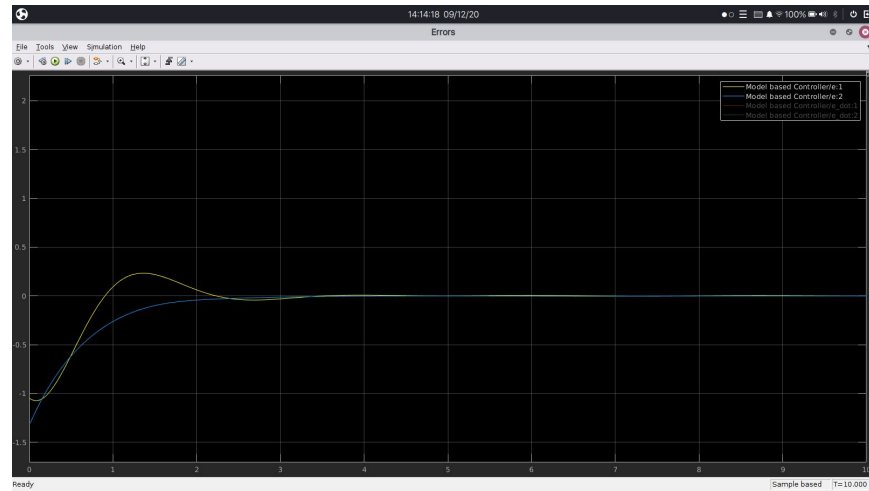


# Robotics Assignment 3

## Linear Controller



# Model-Based Controller



Remark:

Model-based controller outperformed PD controller as MBC was able to force the error to a smaller threshold than the PD controller. Model-based controller actuated control effort for the lesser time at lower values than PD controller, hence less consumption of power.

Note:

Derivatives of  $q_d$  are computed analytically then the expression is fed into the controller. The numerical differentiation was giving singularity at the starting point(Left side rule).

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