

CH5120 ASSIGNMENT-4

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Problem 1:

In the lines, 6-12 Step Response Model for Plant is generated.

In the lines 30,31, two save matrices are now being created one for the model output and one for the actual plant output.

Inline 68, error at the previous instant is multiplied with a column vector of ones and the elements till the prediction horizon are added to the predError inline 73.

Inline 91, column vector of previous output error is now being added to YHAT.

In the lines 93-100, plant output to the computed output is generated and both the model and plant outputs are stored in their respective save matrices in lines 103-106.

In the lines 110-117, code has been modified to now plot both the model predicted outputs and the actual outputs in red and blue respectively.

Problem 2a:

In lines 9-13, Disturbance matrix is stored and the step model for disturbance is computed.

Error is now always zero as there is no model mismatch.

Inline 70, the change in output due to the disturbance is computed and the values till the prediction horizon are being added to the predError inline 71.

In lines 90, the model output is now being computed along with the disturbance effect.

Problem 2c:

The code for part 'b' is exactly the same as that for part 'a' except for the disturbance matrix being modified to the one in part 'b'.