

Experimental Data Plots

1 Purpose

I would like you to use the experimental data in discussing your project. To “encourage” this, I want you to make up plots of *your* simulated and experimental data for *each* controller you submitted. You don’t need to discuss the data, just plot it. This is due Monday, April 14.

2 Experimental Data

The MAT-files I emailed you should contain the following:

```
>> load gpslead
>> who
```

Your variables are:

```
e_exp      e_exp_rms  pos        uout       yout
```

Variable `e_exp_rms` is scalar RMS error; the other variables are vectors. The input is `pos`, which is a 126×2 array with time and input as the columns; Variables `e_exp`, `uout`, `yout` and experimental error (counts), control force (V), and output (counts). All those are 125×1 vectors, except for `yout` which is 125×4 (we forgot to strip out columns 2..4, but you’re not using that for this assignment). Also, just plot the first 125 samples.

2.1 Required Plots

For each controller make *two* plots: error (counts) and control force (V). On each plot show your simulation results and the experimental results.

3 Example

Here is an example of my error plot for the lead compensator:

