ENG 4550 – Introduction to Control Systems
Lab 2

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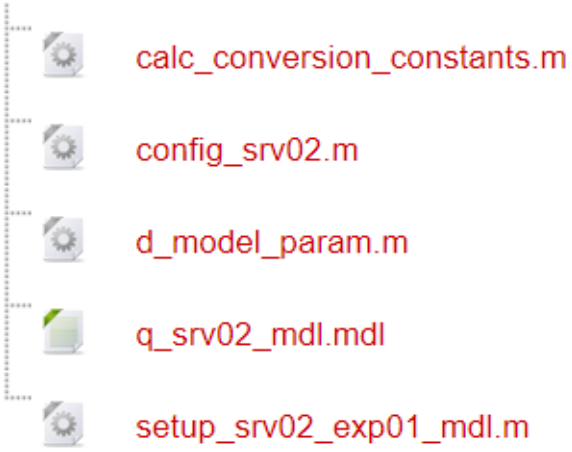
Lab 2: SRV02 Modeling Part 2 – Bump Test & Model Validation Experiment

Lab 2

- Please use the same SRV02 as the one in your Lab1.
- In ‘ENG4550 control systems’ on desktop, unzip ‘Lab MatlabSimulink Software-20181001.zip’ to a NEW DIRCTORY. All files you need in Lab 2 are in …/NEW DIRCTORY/Modelling (LAB 1 and 2)



- When complete, DELETE/REMOVE your files and the FOLDER you created.

Bump Test

1. **Configuring the SRV02 according to Section 1.4.2 in Workbook.**
   - Setup q_srv02_mdl.mdl: Double-click on the QUARC HIL Initialize block. Select the data acquisition device (q2_usb or q8_usb) you are using. Click on the **Defaults** and **OK** button.
   - In setup_srv02_exp01_mdl.m, make sure MODELING_TYPE is set to '**MANUAL**'. Run setup_srv02_exp01_mdl.m.
2. **Follow the steps in Section 1.3.2 Bump Test Experiment.**
   - Before building the model (Step 5), click QUARC -> Set Default Options to avoid the possible target error.

Model Validation Experiment

Typos: Update Diagram is in Simulation menu, not Edit menu. (In Steps 8, 10)

Ignore all contents about Nominal values or model in Steps 12, 14, 15, 16, Table 1.2 and your Lab report.

1. **Follow the steps in Section 1.3.3 Model Validation Experiment.**
   - Before building the model (Step 4), click QUARC -> Set Default Options to avoid the possible target error.

Submission of next lab

1. Lab report (Lab 1 & Lab2)

- Finish your lab report according to the template in Section 1.5.1 and tips in Section 1.5.2.
- In Section 1.5.1 Template for Content

  II. RESULTS

  4. Provide data collected in this laboratory (from Table 1.2, not 1.1).

2. Pre-lab question #2

- Questions 1, 2, 3, 4, 6 and 7. (The nominal SRV02 model parameters K and τ are 1.53 rad/(V s) and 0.0254 s, respectively.)