**Delft University of Technology,**

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**SC4040 Filtering & Identification**

**FINAL ASSIGNMENT**

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# Introduction

For the purposes of this assignment, we are given 7 datasets (each with 2 inputs and 4 outputs) and we are to put into practice the ‘identification cycle’ as explained in class. We shall not repeat the description of the assignment in this report. This information can be found in [1].

# Model Choice (Input/Output Set)

We selected dataset 1 as our model choice for the following reasons:

* Adequate amount of input/output data available (sample size 50000)
* Longest experiment running time from all the datasets (50 seconds)
* There is no input/output clipping when the data is viewed in MATLAB

# Datasets Rejected For Model Selection

We rejected the following datasets:

|  |  |
| --- | --- |
| **DATASET #** | **REASON FOR REJECTION** |
| 2 |  |
| 3 | Clipping occurs on input and output signals and this means that we are missing information from the signals. |
| 4 | When trying to perform model selection, MATLAB throws an error saying that the computed ‘A Matrix has an unstable pole and hence the estimates of B and D would be very bad.’ |
| 5 | According to [2], we know that the model accuracy is directly proportional to the duration of the experiment. This dataset’s duration is only 0.75 seconds and there are only 750 samples present. This amount of data is insufficient for model selection. |
| 7 | When trying to perform model selection, MATLAB throws an error saying that the computed ‘A Matrix has an unstable pole and hence the estimates of B and D would be very bad.’ |

# Model Selection Description and Motivation

# Model Evaluation

# Model Suitability

# Bibliography

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