

Report of Matlab use to analyze Data from Spring 2016

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Summary

The folder Matlab files contains various analysis done from data of spring 2016 and part of spring 2017 (March 31, 2017). The goal of the analysis was to produce the relationship of two of the three physical parameters (load torque, motor speed and supply current) while the 3rd is held constant.

Reason for matlab analysis over excel

- 3-31-2017 data did not have many data points, therefore, matlab analysis would take advantage of matlab functions of interpolation and surface plots. Cuts were to be made on the surface plot, at a constant value of the 3rd parameter of setting the relation of the other two.
- Spring 2016 data could also be easily read into matlab and analyzed for the same purpose.

Challenge

- The data being analyzed was not in a form accepted by the 3D function because it is required that for n values of say, load torque that are being held constant, $n \times n$ values of supply current and motor speed are required per load torque value. The dataset in use did not exhibit this feature, therefore, the slice function could not be used.
- The plots shown in the matlab files folder are those of 2D surface being forced to 3D. They do not work.

Advice

Learn from this and do not try to do this analysis if the data set you have is not sufficient.