

# DESIGN OF AN ADAPTIVE CRUISE CONTROL SYSTEM FOR A MODEL VEHICLE

## Mathematical Modelling of Real World Systems

- Using differential equations to model a vehicle drive train, as well as the forces acting on the vehicle
- Converting equations into the Laplace domain to find the system Transfer Function

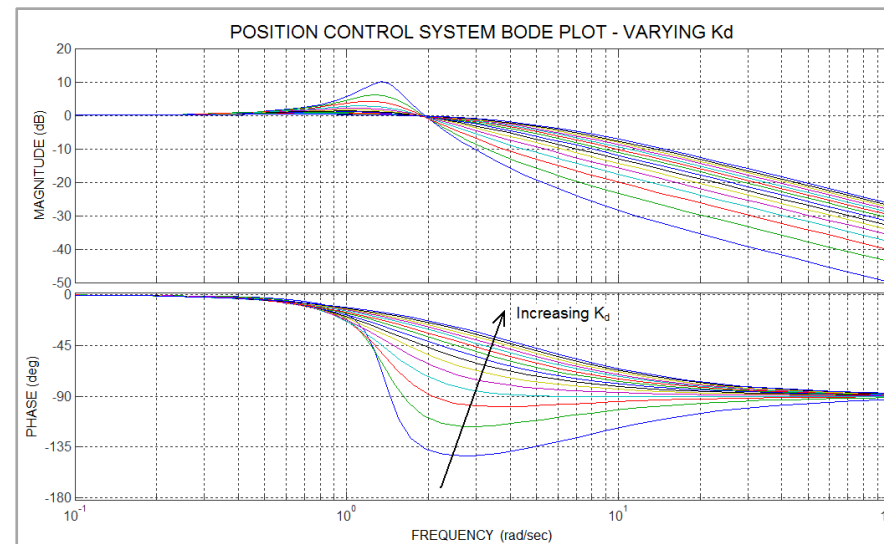
## Controller Design and Analysis

- Designing a suitable controller for the modelled system
  - Determining the step response characteristics
- Use of frequency domain analysis techniques such as Bode Plots to determine controller gains
  - Improving system stability

by **Thomas McVey** of Bristol University  
Supervisor: **Dr. Guido Herrmann**  
Bristol Department of Mechanical Engineering

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## Building a Test Rig

- Design and build of a test vehicle for early experimentation

