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Universidad Pública de Navarra
Nafarroako Unibertsitate Publikoa

Bachelor Thesis Proposal (12 ECTS)

THESIS SUPERVISOR

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DEPARTAMENT / INSTITUTE*: Department of Automatic Control and Computer Science*

CAMPUS*: Pamplona*

TITLE

Modelling, simulation and control of a Hovercraft vehicle

REQUIREMENTS

1) A course on basic control engineering (dynamical systems, linearizations, transfer functions, bode plots…)

2) Experience with Matlab and Simulink.

SUMMARY

Hovercraft vehicles are underactuated systems with two inputs and three outputs. The objective of this project is to design a basic trajectory control system for them. First, a simulator of the system will be built in Simulink, based on its dynamic equations. Then, the system will be linearized around operating points and/or acceptable trajectories. Finally, a 2DOF (feedforward + feedback) control law will be designed and tested in the simulator.