The Automated Agriculture Vehicle for Operating on Steep Slopes (AVOS) is a Robot that is designed for performing spraying tasks in steep slope vineyards.

Its propulsion system is equipped with multiple actuators, including two propulsion wheels, one motor winch and two steering wheels.

This setup was chosen, to ensure a safe and reliable operation on inclined, slippery and uneven ground.

The implementation of a controller that allows accurate lane keeping and fast operation, while being efficient with respect to energy usage is a challenging task, that must be tackled in order to enable proper vehicle operation.

Possible Tasks

- System Modelling, Simulation and Parameter Identification
- Conventional Controller Design (like Linear Control, Robust Control...)
- Comparision or Fusion with Alternative Controller Concepts like Fuzzy Control or Behaviour Based Control
- Investigation and Optimization of Energy Flow

Requirements

- Knowledge in Control Theory, Physics Modelling or Vehicle Dynamics
- Experience with Simulink

Contact

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