

Motion Planning and Control for Automated Vehicles

Motion planning and control is one essential challenge in the development automated vehicles. It includes the planning of a drivable, safe and comfortable vehicle motion based on a driving task and a perceived environment and the tracking of this motion using the vehicle actuation systems (steering propulsion and breaking system). Whereas there exist many promising approaches and implementations for specific automated driving use-cases, the generalization and modularization of this task is an ongoing research topic. Within this project the focus is on the generic coordination of path planning and tracking. The specific research topics include:

- Investigation of the impact of different lateral tracking error definitions on tracking performance
- Classification and generalization of tracking error computation
- Theoretical basics and properties of different path representations and interpolation approaches
- Modular interface design between motion planning and control
- Generic motion planning and control architecture design

