When mobile machines drive on unsatisfactory ground conditions, e.g. uneven ground, unexpected oscillations appear inside the drivetrain, which potentially decrease the reliability and cause failures of drivetrain components. In order to investigate the dynamic loads from the ground on drivetrain components, a dynamic tire model needs to be built in Matlab/Simulink. This tire model should include the following aspects: tire dynamic structure, overall static characteristics, slip behavior (μ-force relation), and tire enveloping property. Thereafter, by using the established tire model, a drivetrain simulation on various ground conditions will be carried out.

Tasks:
- Understanding necessary tire characteristics
- Establishing a tire model using Matlab/Simulink
- Simulation of a off-highway drivetrain with the established tire model

Requirements:
- Modeling in Matlab/Simulink
- Basic knowledge of vibration/multi-body dynamics
- Basic knowledge of vehicle/drivetrain dynamics
- Independent and responsible working ability

We provide:
- Insights in current research topics
- Professional discussion and intensive academic support
- Very nice working environment