



Traction control for a 3-wheel electric motorcycle

Design, implement and test a traction controller for an electric motorcycle.

OMotion is located in Hjärup outside of Lund. We have developed a 3-wheel electric motorcycle. It has two wheels in the front and one in the back. The motor is a hub motor in the rear wheel. The top speed is 110 km/h and the range 100 km.

We are currently working on a new model, called OMOTION 2. OMOTION 2 will have the same look and feel as our current model, but with a lot of improvements.

One feature that we want to add for the OMOTION 2 is traction control. The basic idea is to measure the yaw given by the steering wheel and compare it to the actual yaw of the vehicle. The aim of the traction controller is to make the yaw of the vehicle follow the yaw given by the steering wheel, and thus avoid lateral slip. Available sensors are:

- Wheel speed on all three wheels
- Steering angle
- Accelerometer
- Gyro

OMotion has developed its own ECU, which means that the traction controller can be implemented in the vehicle and tested live.

