

Supervisor meeting

13th of November 2015

Vehicle running free (without controller)

- There is a lot of Coulomb friction in this system (stiction at the beginning)
- Adapt the voltage at the beginning to get rid of this dry friction (put an offset)
 - Then the first step might have the same gain and time constant as the second step, in which case the system would look closer to a first order system
- The comparison of step-responses between real and approximated systems seems really nice : they match very well

Controllers

- both need to be re-done with the right gain which has to be re-measured with the right PWM frequency

Steering model and tests

- The time must appear in the test
- We need to consider 'small signals' : try a step-response by driving at a constant speed and then steer (use angle output)
- See how fast it integrates the angular velocity
- Do only the new test (just described)
- Maybe the modeling of the differential is not that complicated (2 equations) :
 - $\omega_m = (\omega_1 + \omega_2) \cdot K$
 - $\tau_m \cdot \omega_m = (\tau_1 \cdot \omega_1 + \tau_2 \cdot \omega_2) + K^2$, where K is gear ratio
- See how the measured data fits the modeling of the steering

Inertia formula

- We need to look at it a bit more before Tom wil help us

Next Supervisor meeting

Next Friday (20th of November) at 12.30