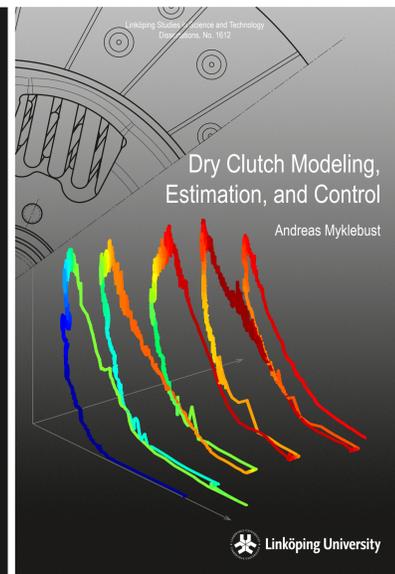
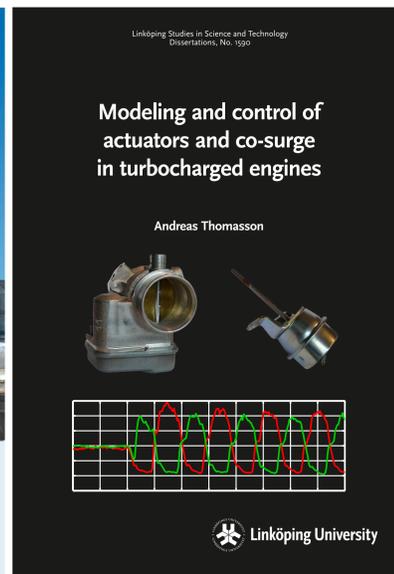
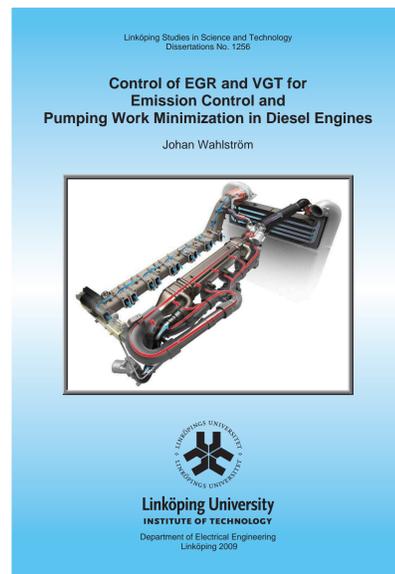


Automotive Systems

LINK-SIC research area overview 2008-2017

Lars Eriksson - Research Leader, Andreas Thomasson - Area Coordinator



LINK-SIC Dissertations in Automotive System

Johan Wahlström. Control of EGR and VGT for emission control and pumping work minimization in diesel engines. PhD dissertation No. 1256, Linköping university, 2009.

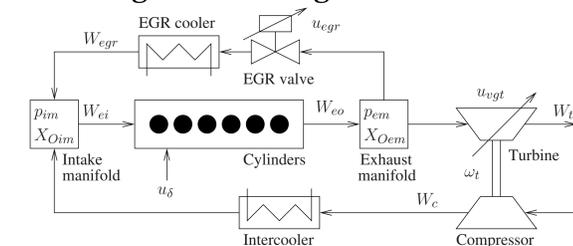
Oskar Leufvén. Modeling for control of centrifugal compressors. PhD dissertation No. 1516, Linköping university, 2013.

Andreas Thomasson. Modeling and control of actuators and co-surge in turbocharged engines. PhD dissertation No. 1590, Linköping university, 2014.

Andreas Myklebust. Dry clutch modeling, estimation, and control. PhD dissertation No. 1612, Linköping university, 2014.

Diesel engine modeling

The earliest LINK-SIC contribution in Automotive Systems from Johan Wahlström, Diesel Engine modeling and control.

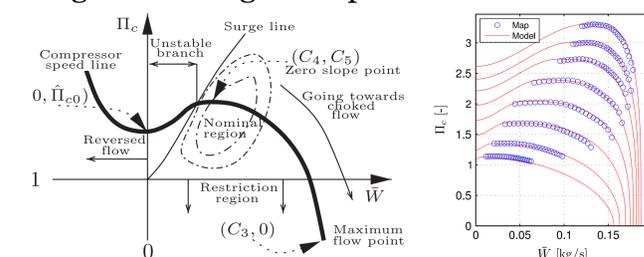


A Matlab/Simulink implementation of the model for a heavy duty Diesel Engine with EGR and VGT, together with a complete parameter file, is freely available at the homepage:

http://www.vehicular.isy.liu.se/Software/TCDI_EGR_VGT/

Compressor Modeling

Oskar Leufvén's PhD thesis focused on modeling of centrifugal compressors.

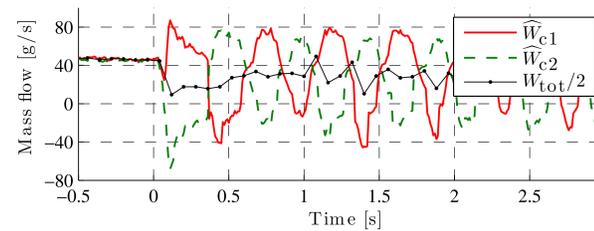
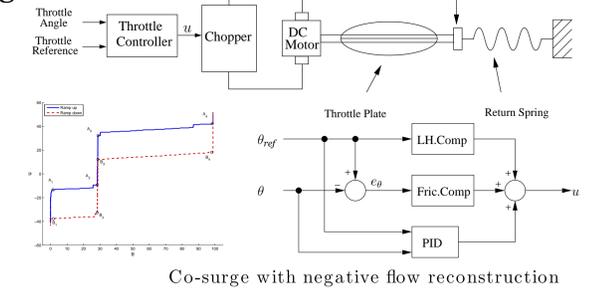


Continued research by Xavier Llamas has resulted in a parameterization package for a control oriented compressor model. The MATLAB tool is freely available at the homepage:

http://www.vehicular.isy.liu.se/Software/LiU_CPgui/

Actuators and Co-surge

The PhD thesis by Andreas Thomasson involves modeling and control of electric and pneumatic actuators in vehicle applications, and co-surge in parallel turbocharged engines.



Clutch modeling

Andreas Myklebust's PhD thesis deals with dry clutch modeling and control. One part is how to model and correct for the thermal expansion of the clutch when calculating the transmitted torque.

