**Specialization project 2022: Input and output transformation for decoupling, disturbance rejection and linearization.**

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Sigurd Skogestad and Cristina Zotica have recently proposed a new idea of transformed inputs v which makes it possible to design in a simple and systematic way static control elements (blocks) that give nonlinear decoupling, nonlinear feedforward control and linearization. This work even shows when to use cascade control.

In the project work, we want to test this on a simple case study from the chemical company Perstorp. It’s a tank heated by a heat exchanger (Example 7 in the paper). We have derived some potential transformed inputs (with cascade) and the main goal of the project is to test this on dynamic simulations using Matlab.

In an extension to a Master thesis work, the goal is to propose and test further promising process examples where the method can be applied.

A link to the paper is found here:

https://folk.ntnu.no/skoge/diplom/prosjekt22/more/input\_transformations\_apr2022).pdf

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