

Lecture 4
**The half rule for model reduction: A part in
the SIMC tuning rules**

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Contents:

1. The half rule for model reduction. Ch. 3.4, 3.4.1 and the SIMC tuning rules. Only time constant + time delay models treated, i.e. using the half rule for obtaining the effective time delay τ and the 1st and 2nd dominant time constants T_1 and T_2 . See also 2) Skogestad (2001) Ch. 5 for more details and examples, and 3) Skogestad (2002) Ch.2 + Appendix E for examples.
2. Discrete time domain description of the PID controller, Ch. 4.2.3. The derivation starts with the transfer function PID controller on ideal form in Sec 4.2.1 Eq.(4.24) and then continuous time domain description as in Sec 4.2.2. Implementation of the discrete PID controller. See also Example 4.1 p. 67