

GalvoModel_v3_detailed

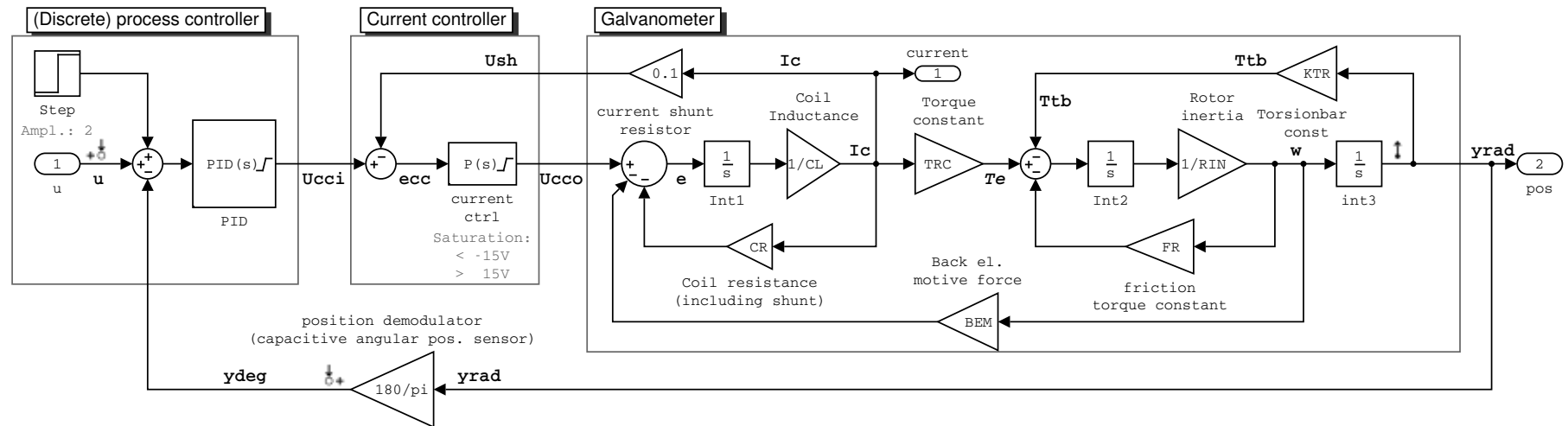
Te: electrical torque, gen. by coils [Nm]
 Ic: coil current [A]
 Tfr: rotor dynamic friction torque [Nm]
 Trb: torsion bar torque [Nm]
 w: angular velocity [rad/s]
 yrad: angular position [rad]
 ydeg: angular position [°]
 Ucci: current controller input [V]
 Ucco: current controller output [V]
 Ush: shunt voltage [V]

CL: coil inductance [H]
 CR: coil resistance [ohm]
 RIN: rotor inertia [kg*m²]
 KTR: torsion bar const [Nm/rad]
 BEM: back EMF const [V*s/rad]
 FR: rotor dyn. friction [Nm*s/rad]
 TRC: torque const [Nm/A]

Torque produced by coil current will rotate the rotor until it is balanced by the opposing torque of torsion bar, load and dynamic friction torque.

balance of force: $T_e = T_{tb} + T_{fr}$

$T_e - (T_{tb} + T_{fr}) = 0 \rightarrow$ no movement



/home/mainster/CODES_local/matlab_workspace/RT_projects/GalvoProject/GalvoModel_v3_detailed.slx