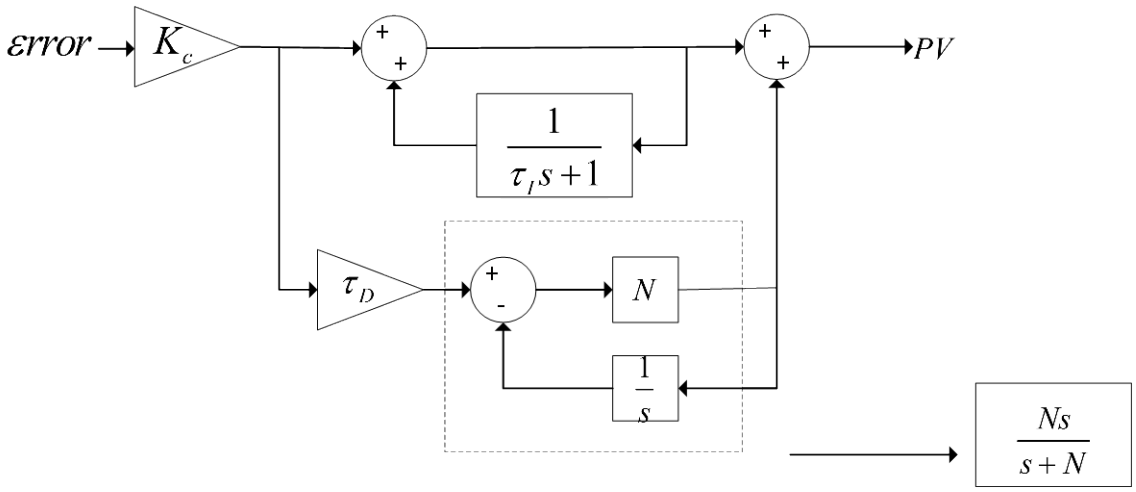
PID Controller implementation in Simulink



Where:

τ_D = Derivative constant

τ_I = Integral constant

K_c = Proportional Gain

N = Filter Coff .

Explanation:

On taking the filter coefficient "N value" to be higher, the term $\frac{Ns}{s+N}$, will become s, which is an ideal derivative term. The drawback of derivative action is ideal derivative has very high gain for high frequency signals. It means the high frequency measurement noise will generate large variations of the control signal. To prevent this situation, the value of filter coefficient 'N' is taken to be low ($2 < N < 20$).