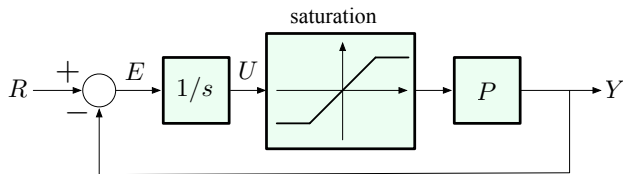


Wind-Up Phenomenon



When the actuator saturates, the error continues to be integrated, resulting in large overshoot.

We say that the integrator “winds up:” the error may be small, but its integrated past history builds up.

There are various *anti-windup* schemes to deal with this practically important issue. (Essentially, we attempt to detect the onset of saturation and turn the integrator off.)