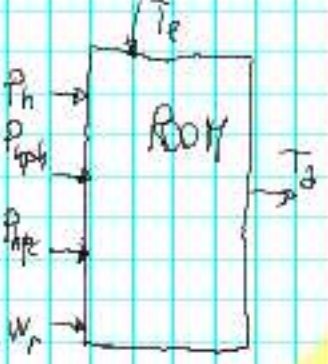
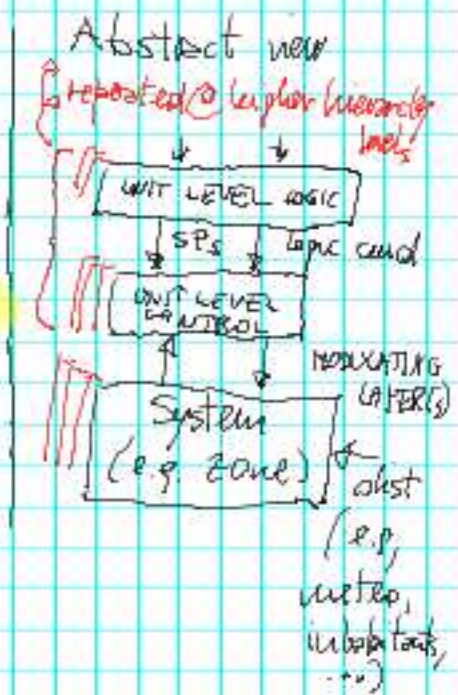
21/05/2014

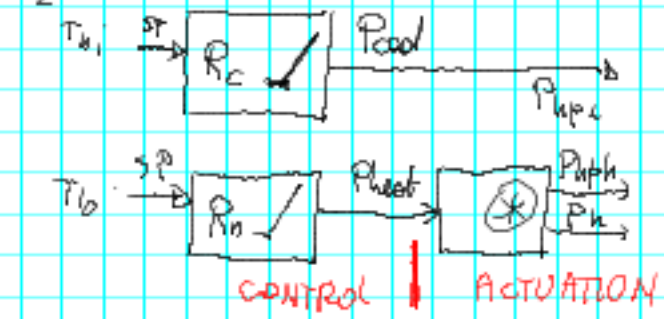
1

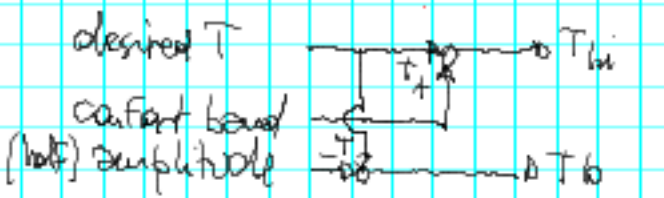




Note: unreviewed material

2





Q_1 : ⊛?

Q_2 : how to let the system "find" when no conditioning is required and make setpoints control power

We need controllers with

(#)
- Variable saturation limits ⇒ anti-windup
- "OFF" capability ⇒ tracking
- (increase/decrease locks for the control signal)

PI controller

Type 1

Digital realisation @ sampling time T_S trailing 1, 2.. $(k-1, k-2)$

$$\frac{1}{1+\frac{z-1}{zT_S}T_i} = \frac{zT_S}{(T_i+T_S)z-T_i}$$

$$xc(k) = \frac{T_i}{T_i+T_S}xc(k-1) + \frac{T_S}{T_i+T_S}CS(k)$$

$$CS(k) = \min\left(CS_{max}, \max\left(CS_{min}, xc(k) + \frac{T_S}{T_i}e(k)\right)\right)$$