As Lecture 3 Part 2

Negfeedback (1)

~~Simple feedback control example (lab 0)~~

Reactive ≠ Self adaptive

Self adaptive needs a 2nd feedback look on the performance of the system

rather than just on a control variable

If performance isn't good then change parameters

monitors & optimises

Problems w/ delays in a system:

- No error = feedback controller does nothing
- Delay = reacting to old information
- There is always some delay but Q is how big is delay & does it matter @ this length of time?

Stability without Control

Systems can be naturally stable
- natural converge to some point

↳ liquid in a room = natural wants to converge to room temp

Example of neg. Feedback, natural Stabil

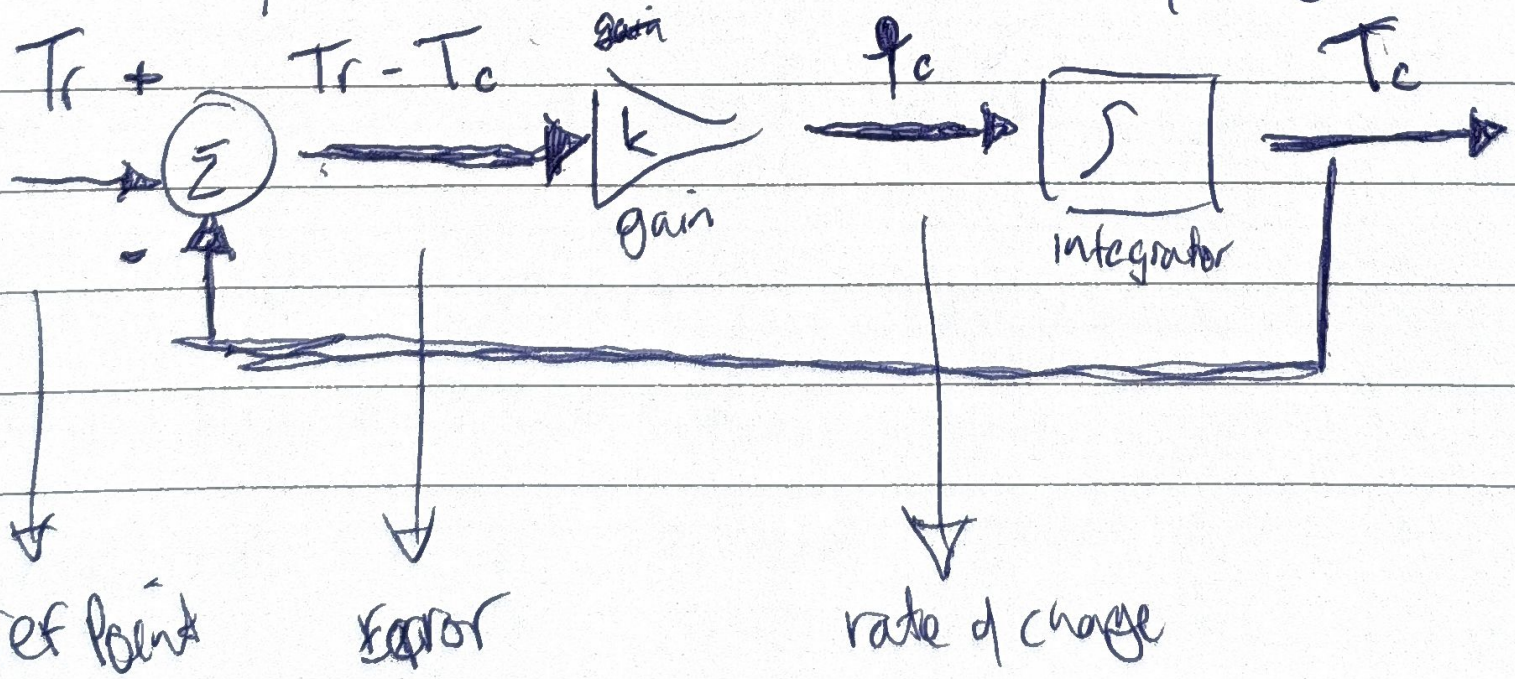
- Coffee cup example

- T_c = Temp Coff , T_r = temp room

newtons model of Cooling: $T_c = k(T_c - T_r)$

where k = rate parameter

This equation describes a sys w/ neg feedback



typically if a var show up on both sides of an eq then this is analagous to feedback = T_C = coffee

In a neg feedback sys the controller acts against the error

Summary

Systems w/ loops in their connects interconnections have feedback

Neg feedback tends to lead to stability

Some sys are natural stable

Control, Neg feedback can be used to turn unstable into stable

feedback can be delayed = cause probs