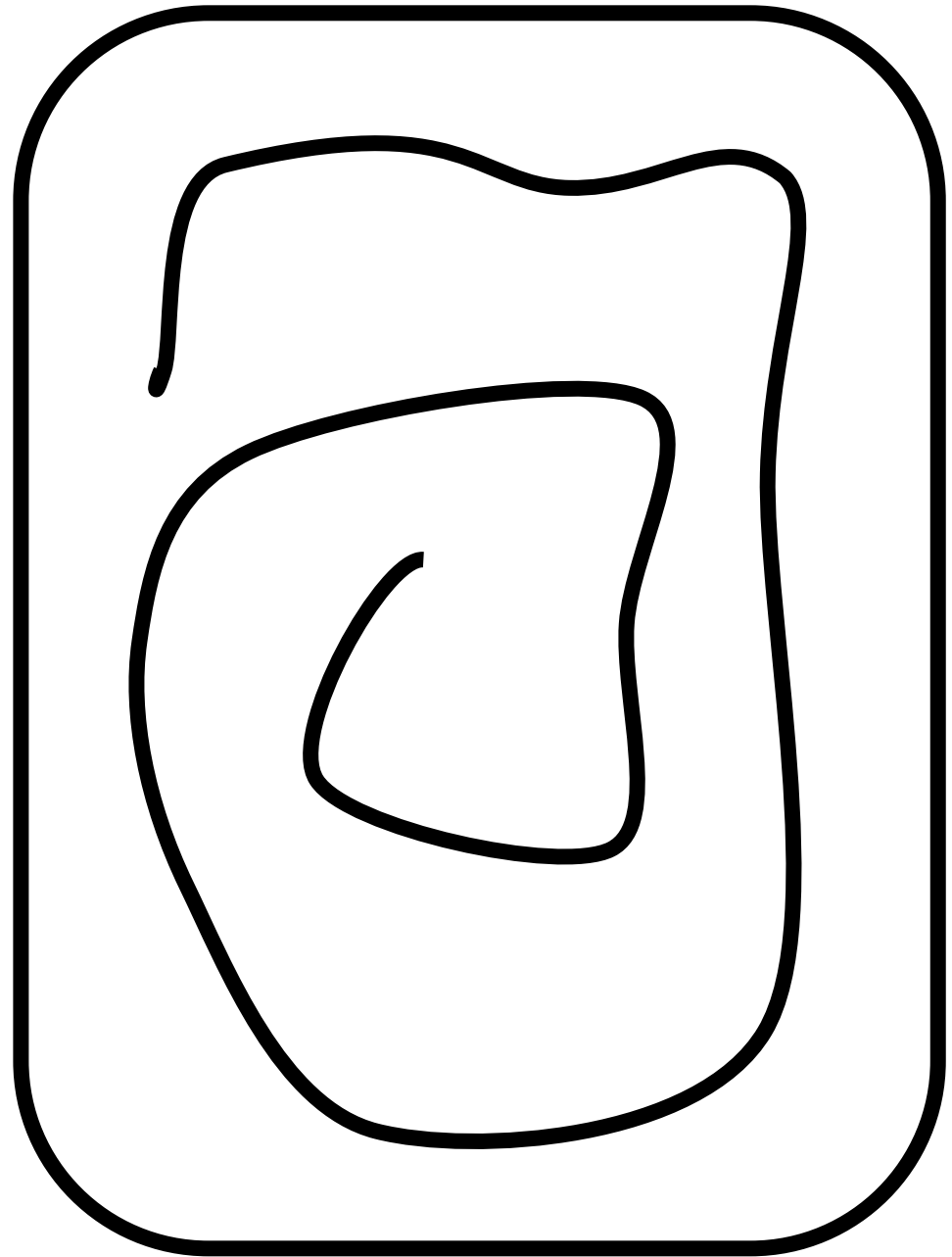
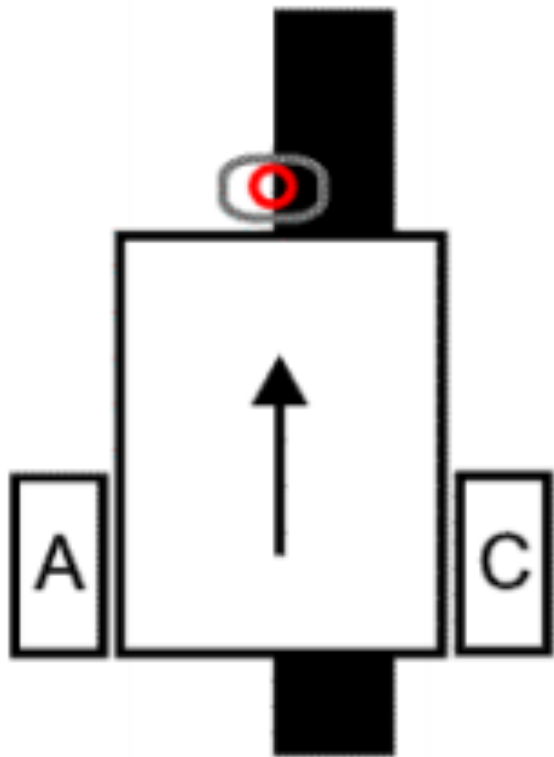


9ª Edição da Escola de Física de
Verão

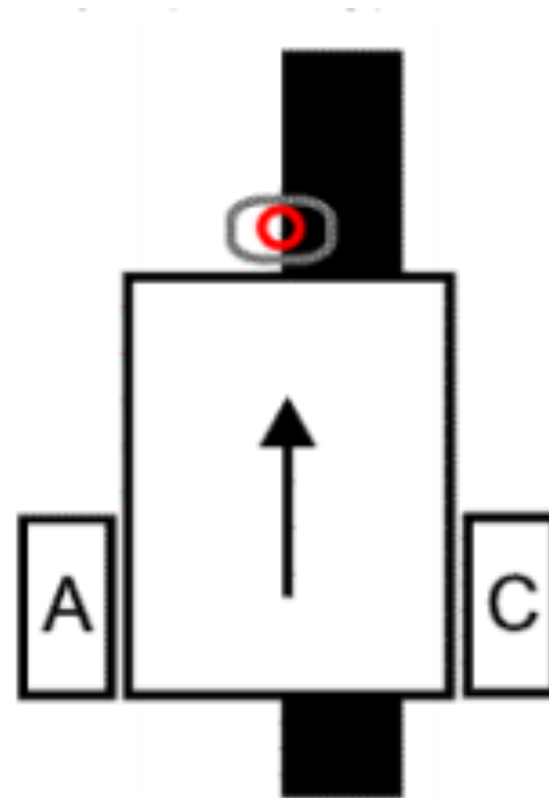
Faculdade de Ciências, Universidade
do Porto

O Robot

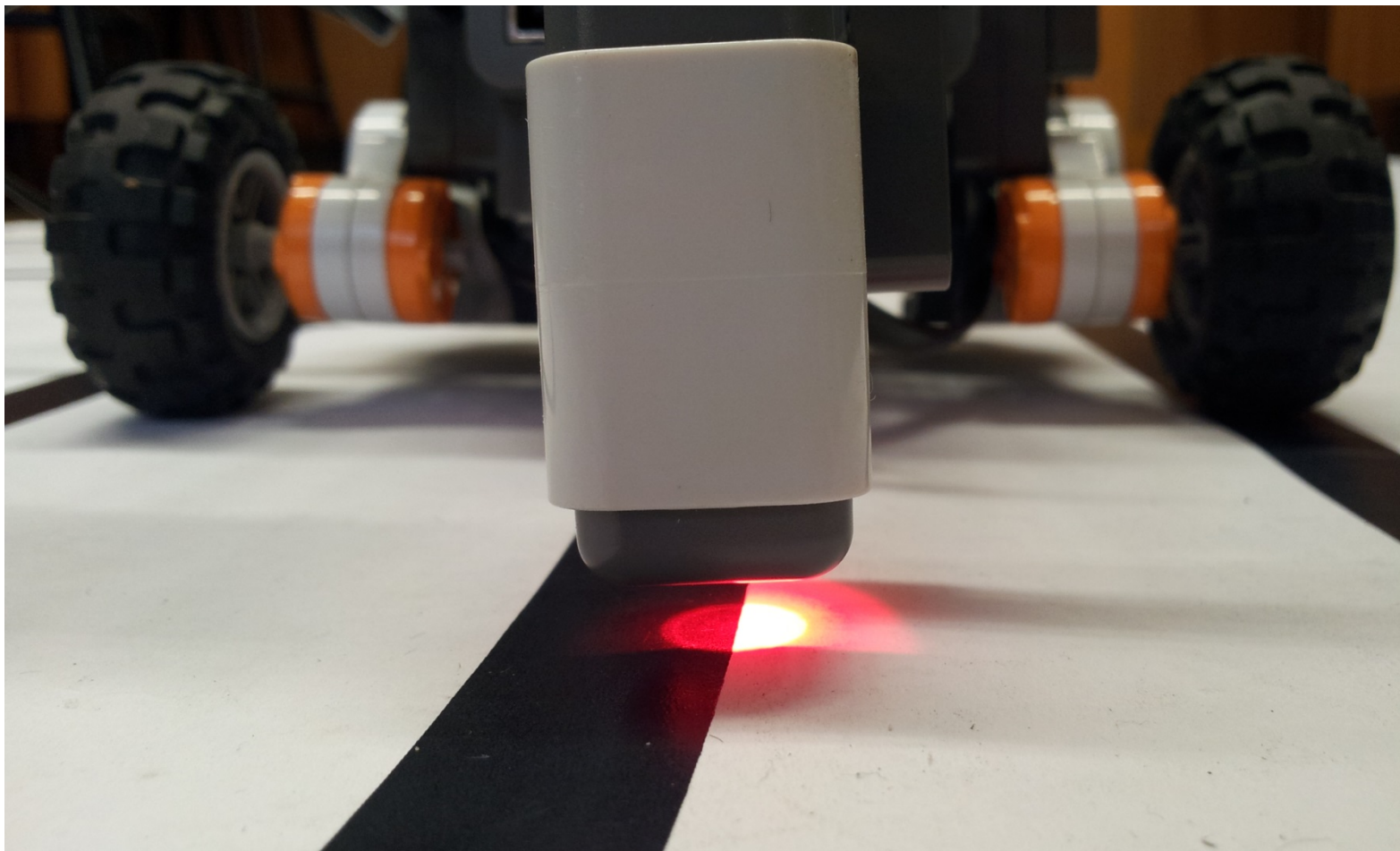


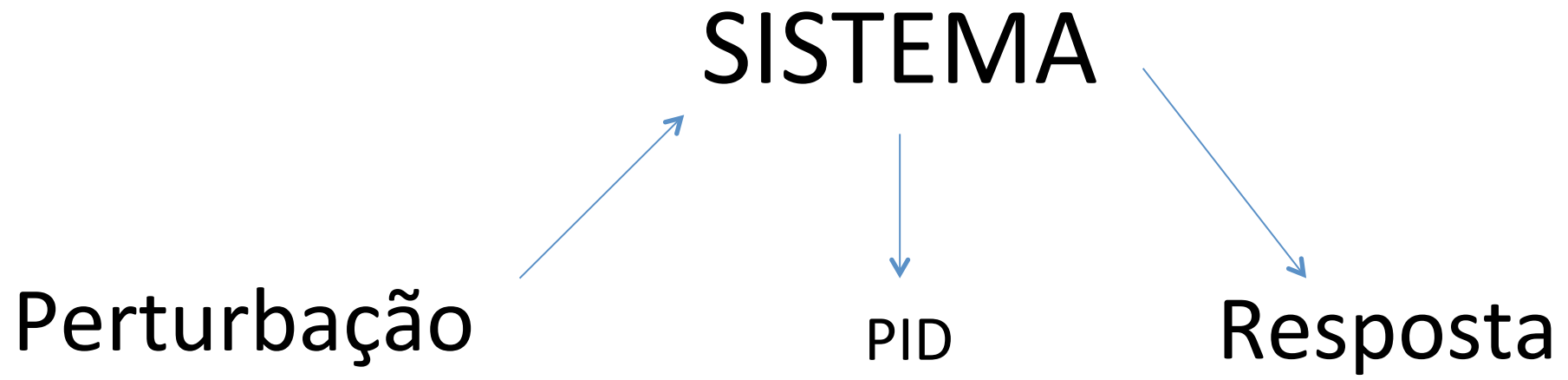


Calibração

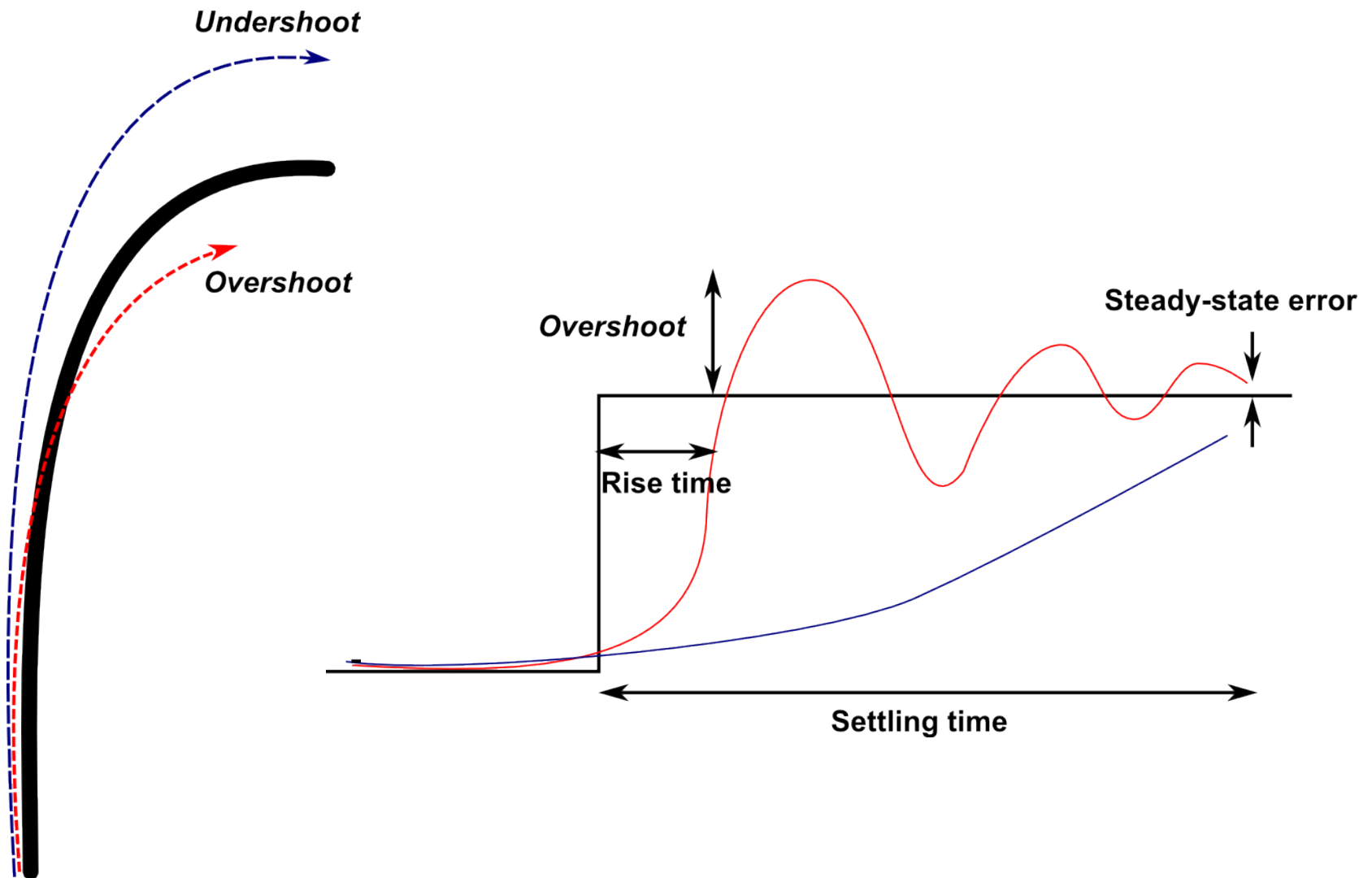


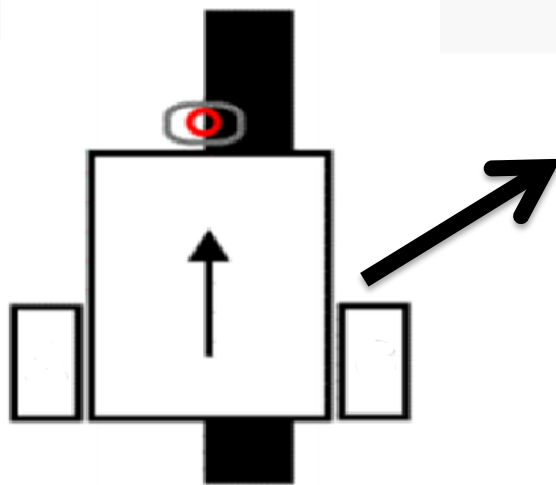
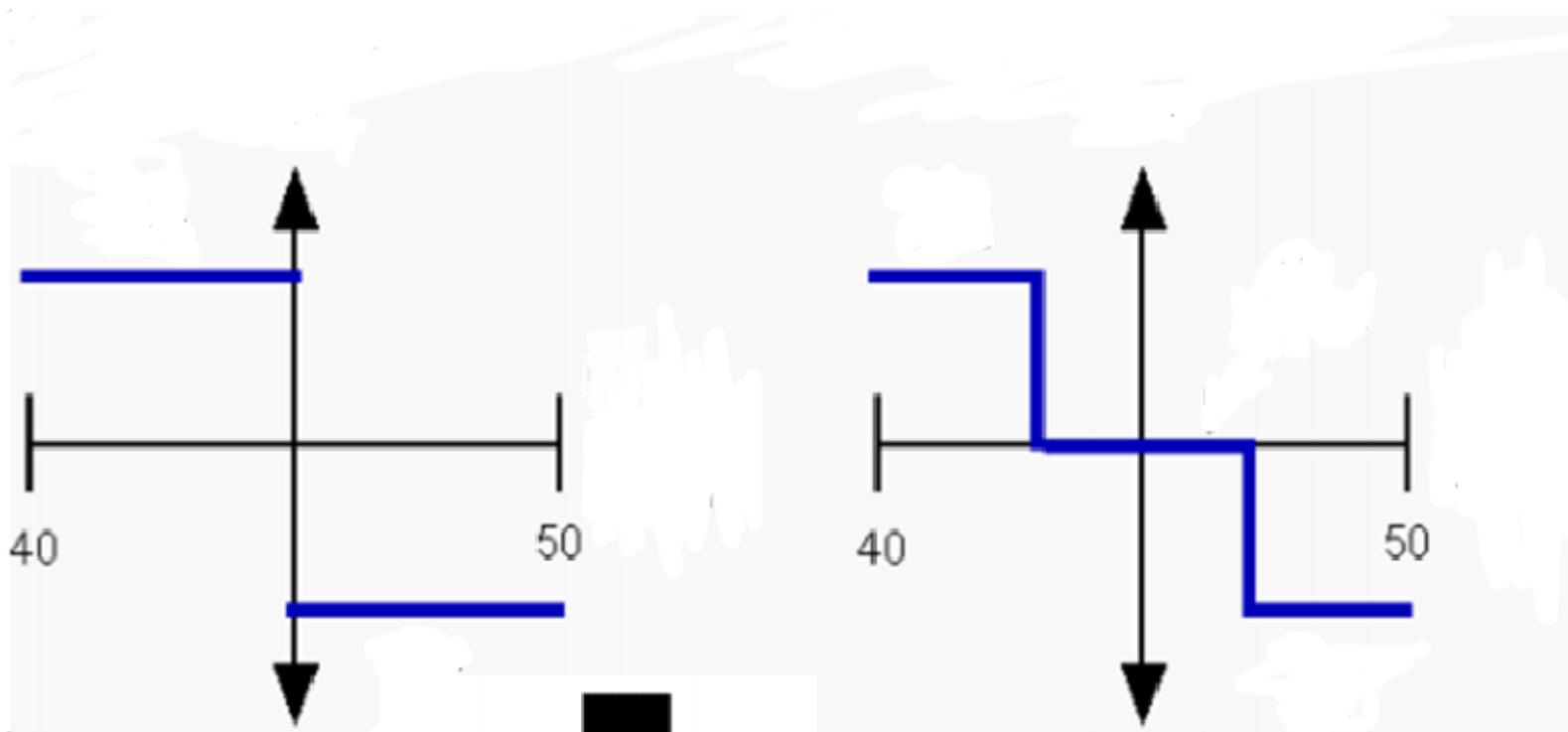
Como Funciona





Variáveis de ganho: K_p , K_i , K_d

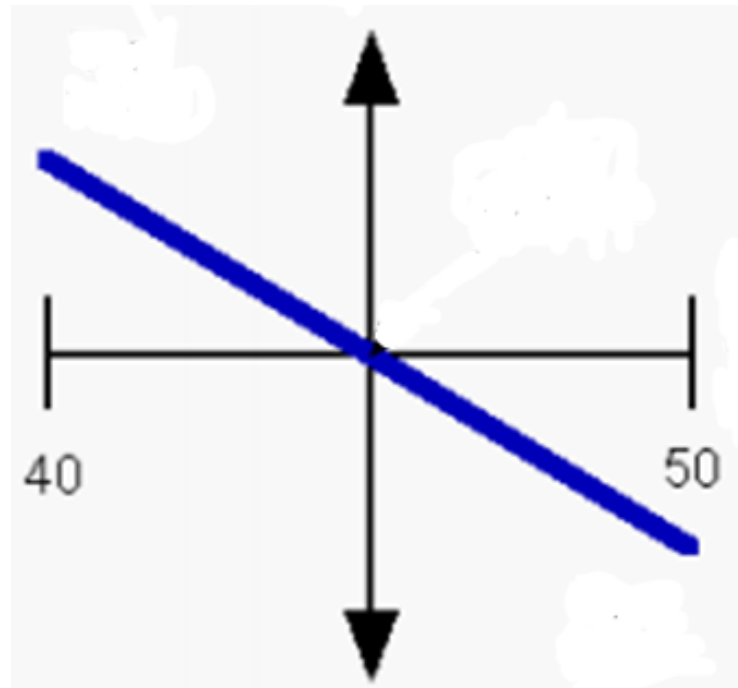




Conforme os estímulos, os motores podem trabalhar a diferentes velocidades para assim poderem virar e responder aos mesmos.

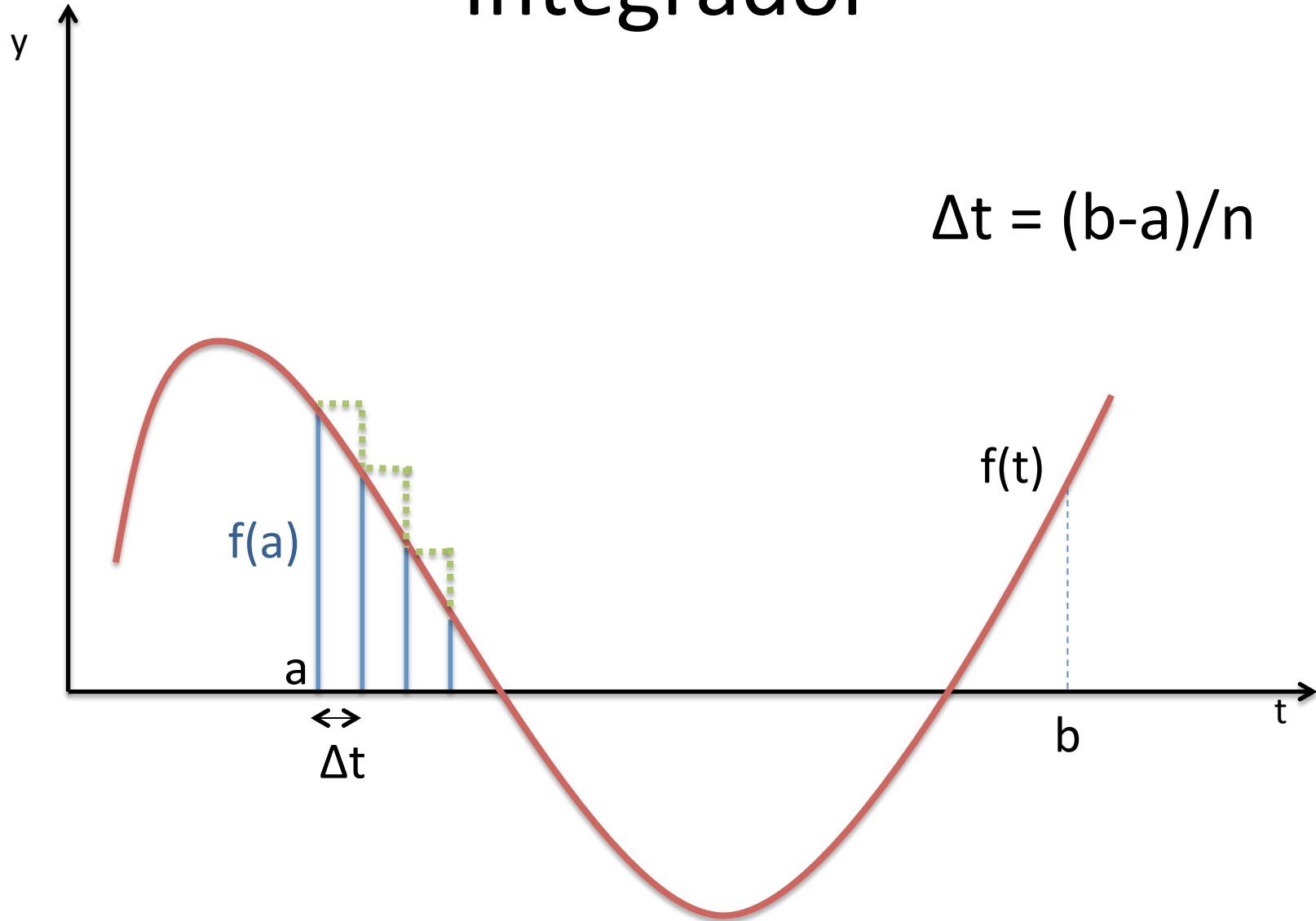
Proporcional, K_p

- Quando no numero de degraus tende para infinito, podemos escrever o gráfico de estímulos como uma função afim.

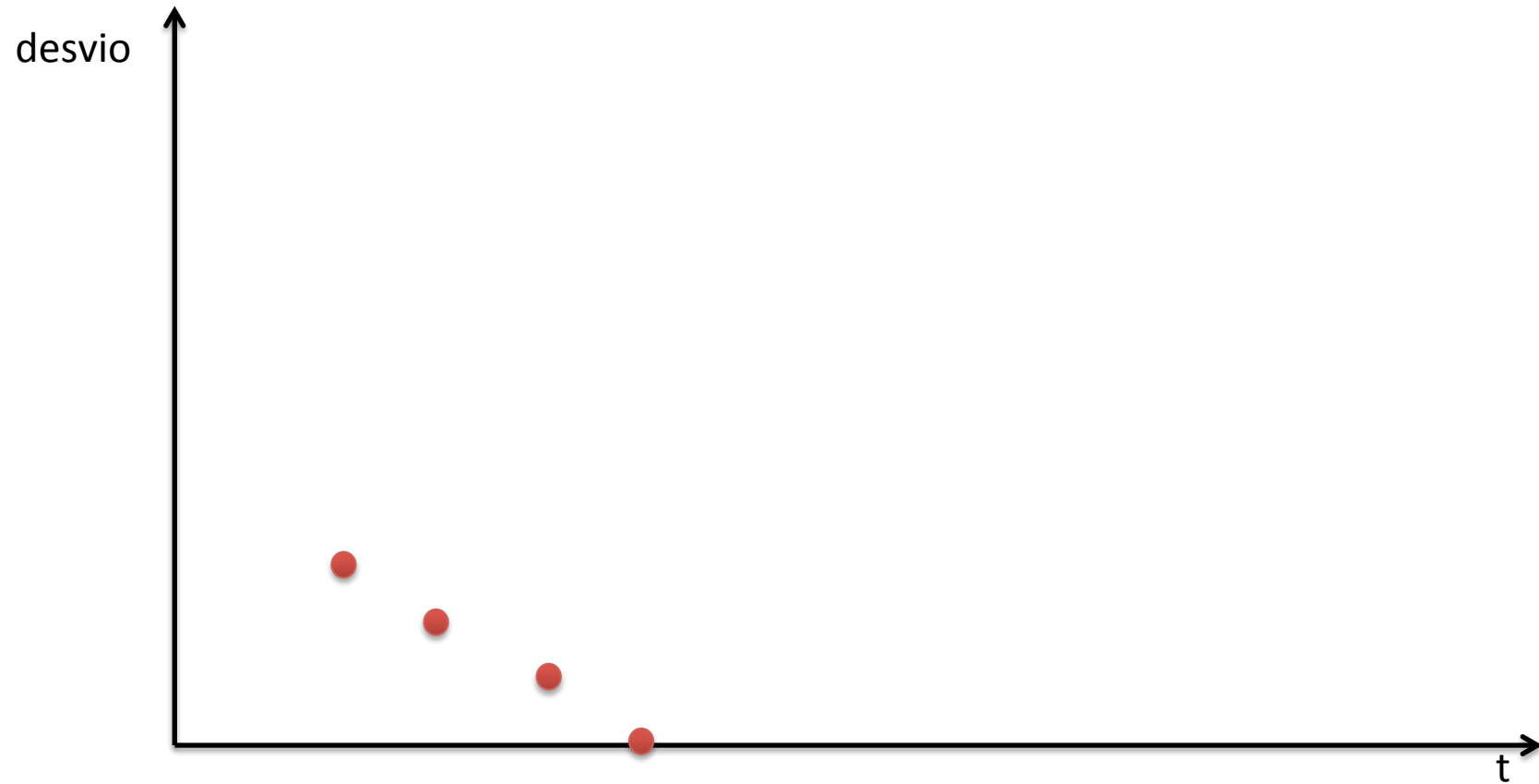




Integrador



Integrador



Integrador

Influência do integrador:

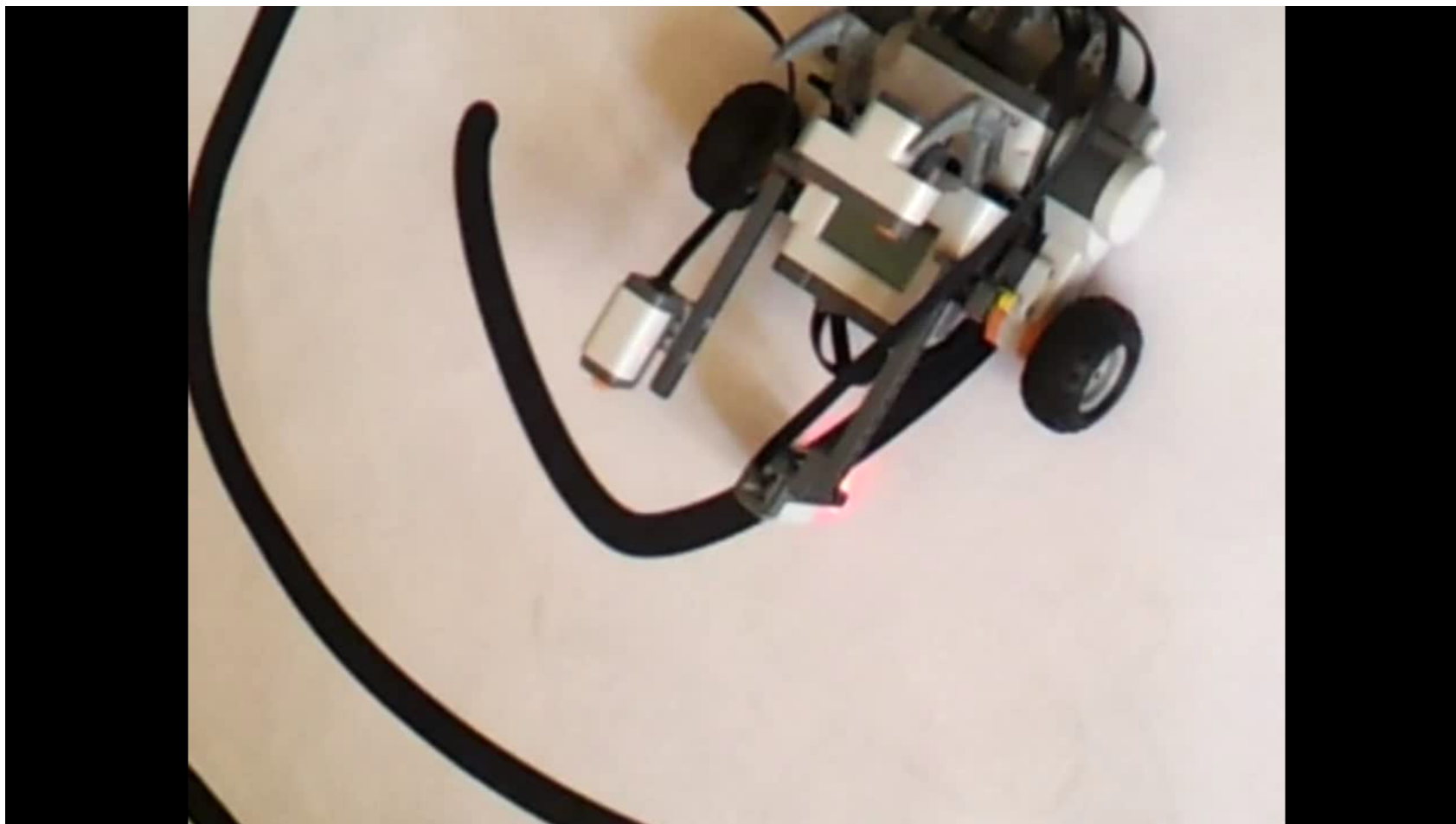
Corrige “erro” a longo prazo

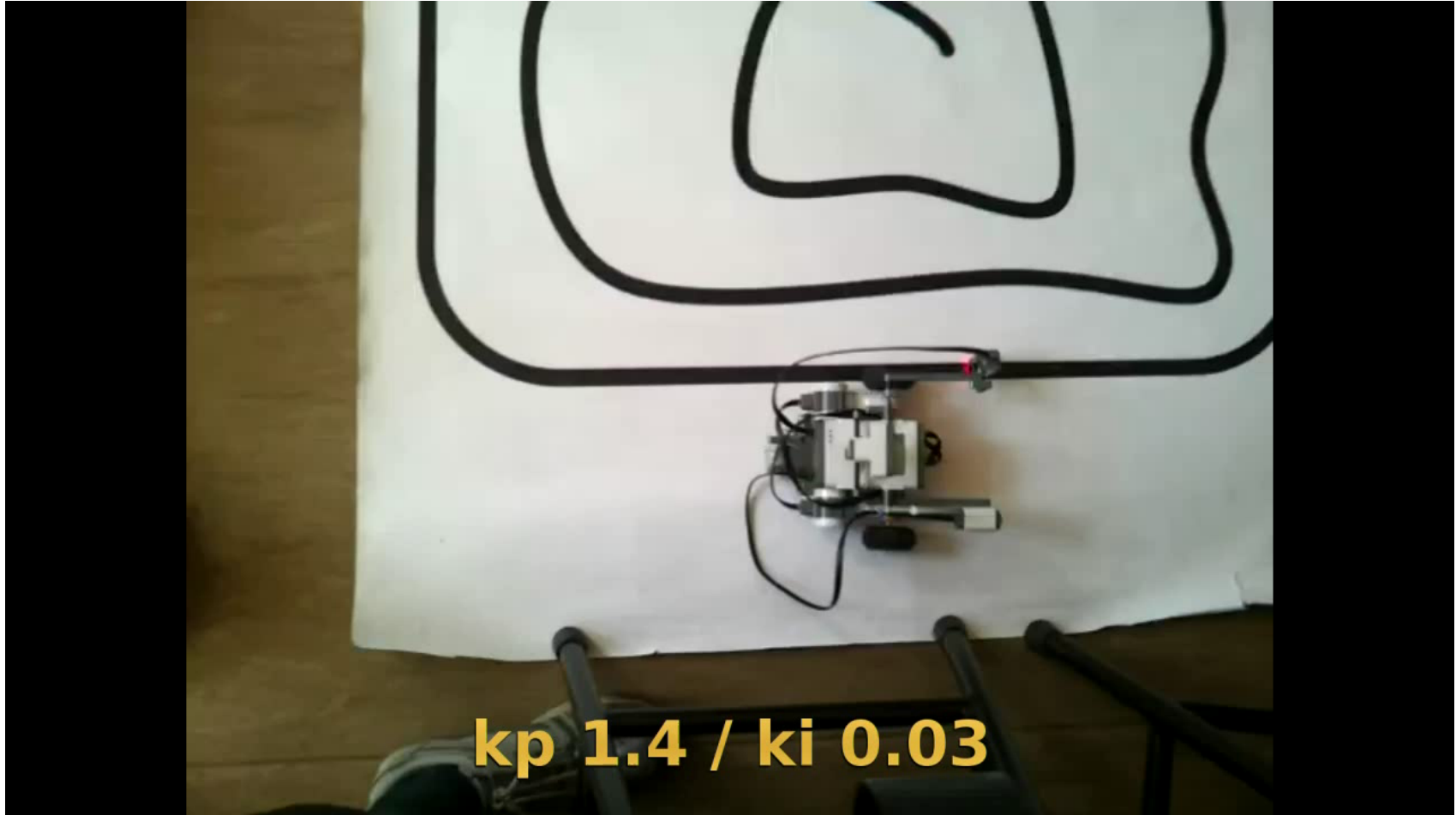
Diminui a capacidade de resposta imediata



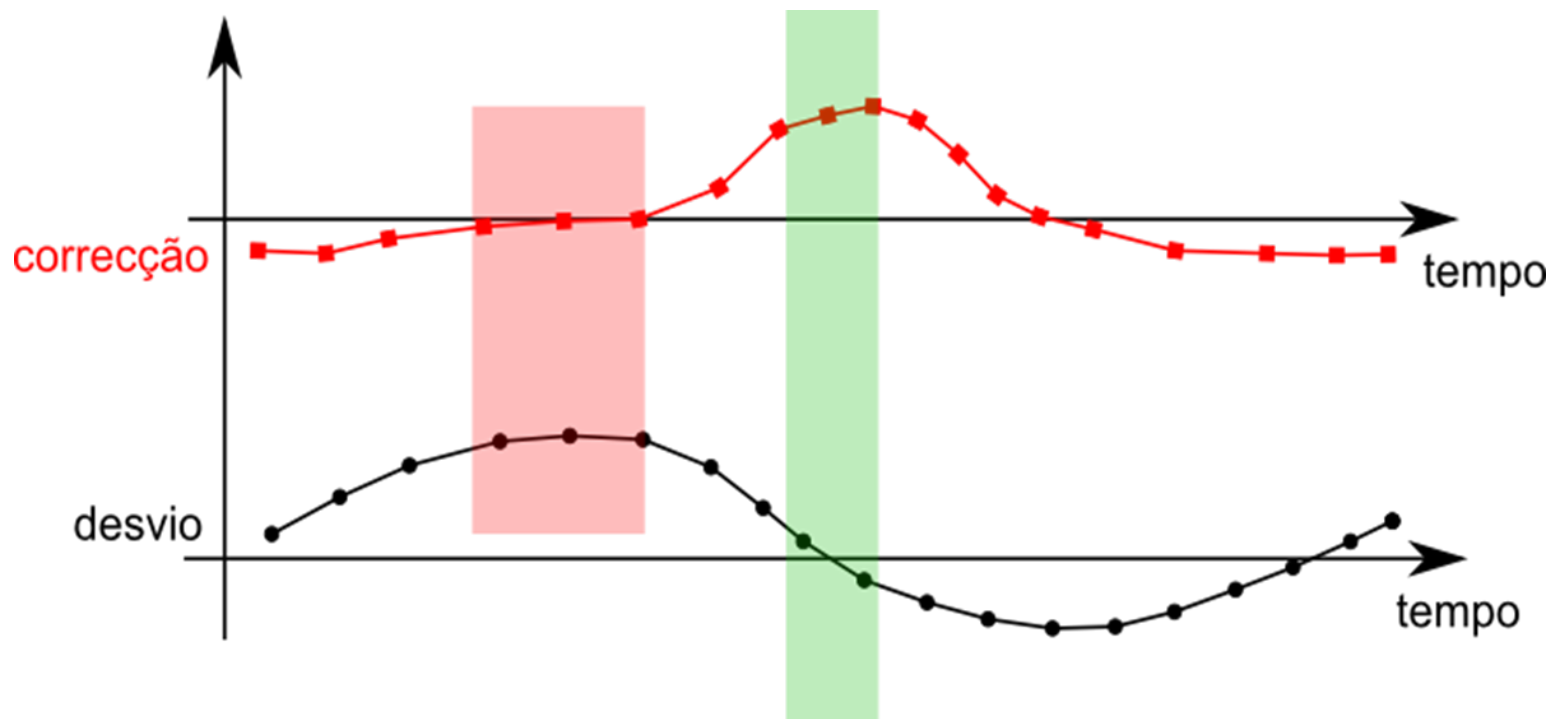
Aumenta o overshoot

Integral wind-up

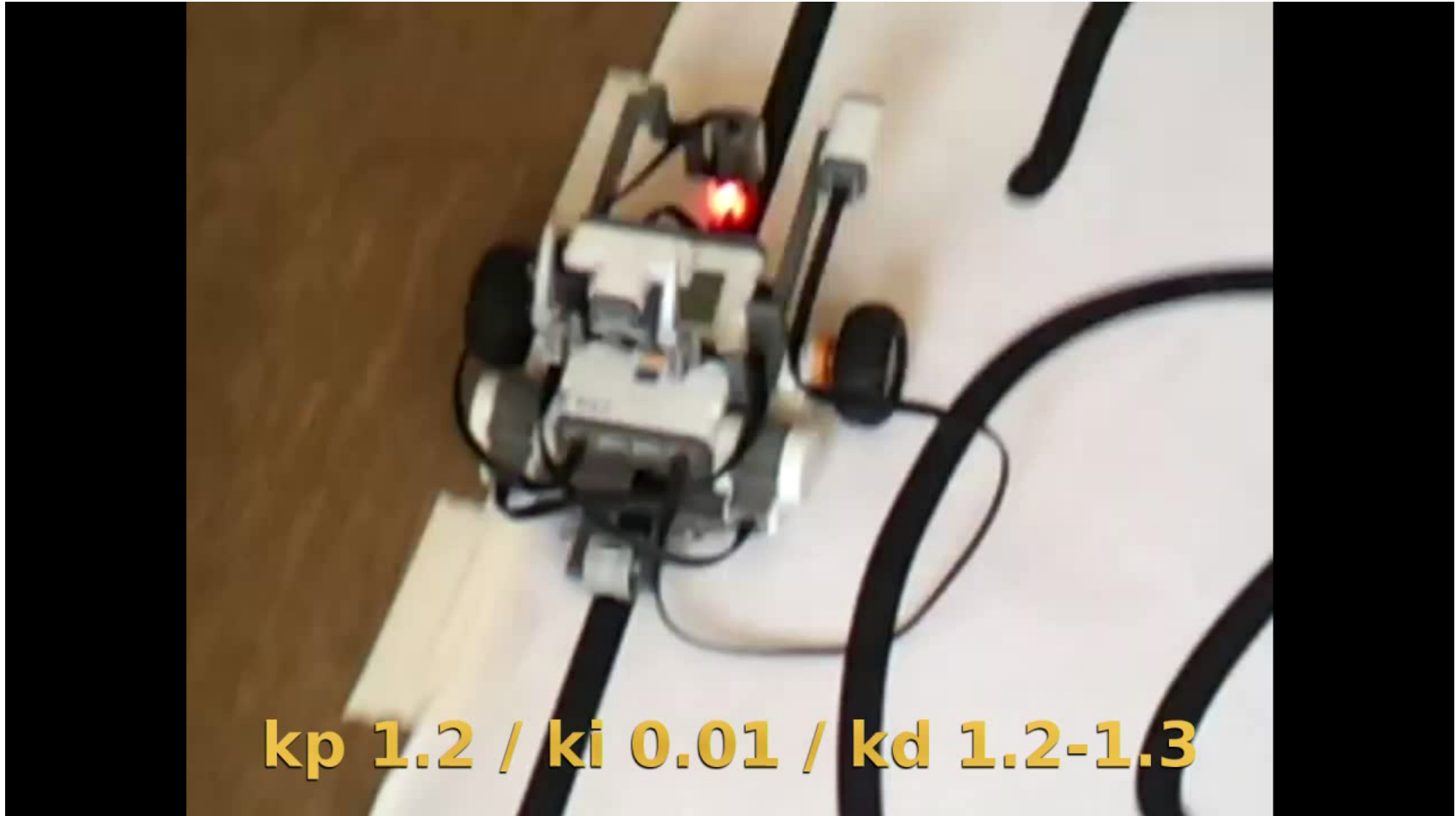




Diferenciador



- Serve para “prever o futuro”.
- Diminui o *settling time*.
- Diminui o *overshoot*.
- Torna o sistema mais susceptível ao ruído.



kp 1.2 / ki 0.01 / kd 1.2-1.3

