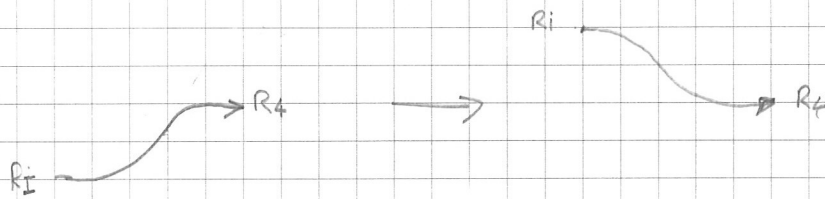


# PLEP

- ① All ramps normalised to be descending, for calculation.



Normalisation is by reflection about final reference,  $R_4$ :

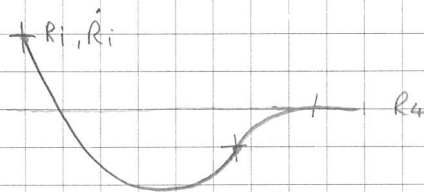
$$R_i = 2R_4 - R_i$$

No exponential section is allowed for ascending ramps.

- ② Possible forms:

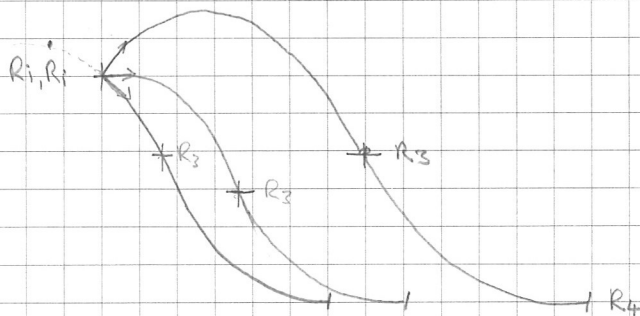
## NOTES

1. P-P



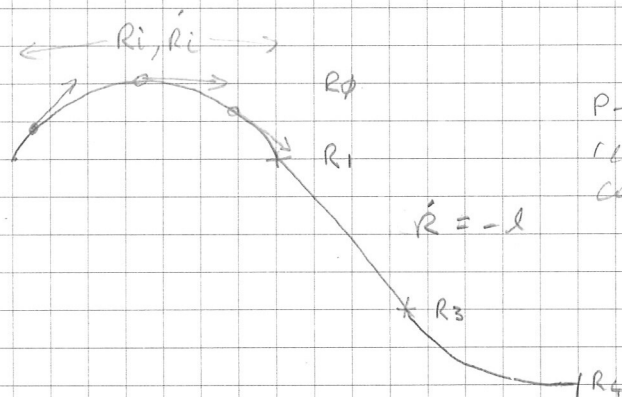
INVERTED. P-P is used when  $R_i$  is too far to stop without undershooting  $R_4$ .

2. P-P



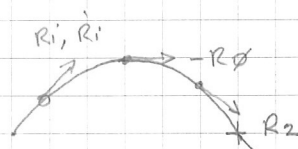
P-P is used when  $\dot{R}$  does not exceed  $\max \dot{R}$  at join between parabolas.

3. P-L-P



P-L-P is used if  $\dot{R}$  reaches  $\max \dot{R}$  (L) before connecting with P deceleration.

4. P-E-P



Exp only possible for true descending ramp.

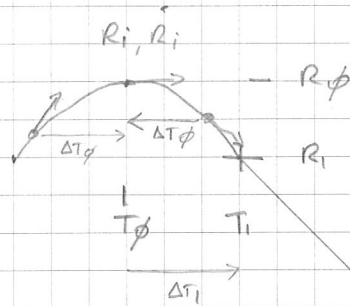
Exp  $T_c = T_c$   
Final exp value =  $R_5$  at  $t = \infty$

exp  $T_c$

$R_3$   $R_4$

$R_5$

5. P-L-E-P



Exp only if real descending ramp.

$\Delta T_\phi$  can be -ve if  $\dot{R}_i < \phi$

$\dot{R} = l$

$\Delta T_2$

$R_2$

$T_2$

$T_c$

$R_3$

$R_4$

$\Delta T_3$

$T_3$

$T_4$

$\Delta T_4$

$R_5$

③ PLEP parameters (after normalisation)

- $R_i$  Initial reference
- $\dot{R}_i$  Initial rate of change of reference
- $a$  parabolic acceleration / deceleration
- $l$  Max linear rate of change
- $T_c$  Time constant for exp
- $R_5$  Final ref for exp at  $t \rightarrow \infty$
- $R_4$  Final reference.