

Curvas elementares para avanço e retorno e suas derivadas

perfil	$f(A)$	$f'(A)$	$f''(A)$	intervalo
avanço parabólico	$2 \cdot L \cdot \left(\frac{A}{A_1} \right)^2$ $L \cdot \left[1 - 2 \cdot \left(\frac{A_1 - A}{A_1} \right)^2 \right]$	$\frac{4 \cdot A \cdot L}{A_1^2}$ $\frac{4 \cdot L \cdot (A - A_1)}{A_1^2}$	$\frac{4 \cdot L}{A_1^2}$ $\frac{4 \cdot L}{A_1^2}$	$0 \leq A < \frac{A_1}{2}$ $\frac{A_1}{2} \leq A < A_1$
avanço cúbico	$4 \cdot L \cdot \left(\frac{A}{A_1} \right)^3$ $L \cdot \left[1 - 4 \cdot \left(\frac{A_1 - A}{A_1} \right)^3 \right]$	$\frac{12 \cdot A^2 \cdot L}{A_1^3}$ $\frac{12 \cdot L \cdot (A - A_1)^2}{A_1^3}$	$\frac{24 \cdot A \cdot L}{A_1^3}$ $\frac{24 \cdot L \cdot (A - A_1)}{A_1^3}$	$0 \leq A < \frac{A_1}{2}$ $\frac{A_1}{2} \leq A < A_1$
avanço senoidal	$\frac{L}{2} \cdot \left(1 - \cos \left(\frac{\pi \cdot A}{A_1} \right) \right)$	$\frac{\pi \cdot L}{2 \cdot A_1} \cdot \sin \left(\frac{\pi \cdot A}{A_1} \right)$	$\frac{\pi^2 \cdot L}{2 \cdot A_1^2} \cdot \cos \left(\frac{\pi \cdot A}{A_1} \right)$	$0 \leq A < A_1$
avanço cicloidal	$\frac{L}{\pi} \cdot \left(\frac{\pi \cdot A}{A_1} - \frac{1}{2} \cdot \sin \left(\frac{2 \cdot \pi \cdot A}{A_1} \right) \right)$	$\frac{L}{A_1} \cdot \left(1 - \cos \left(\frac{2 \cdot \pi \cdot A}{A_1} \right) \right)$	$\frac{2 \pi \cdot L}{A_1^2} \cdot \sin \left(\frac{2 \cdot \pi \cdot A}{A_1} \right)$	$0 \leq A < A_1$
retorno parabólico	$L \cdot \left[1 - 2 \cdot \left(\frac{A_2 - A}{A_2 - A_3} \right)^2 \right]$ $2 \cdot L \cdot \left(\frac{A - A_3}{A_2 - A_3} \right)^2$	$\frac{4 \cdot L \cdot (A - A_2)}{(A_2 - A_3)^2}$ $\frac{4 \cdot L \cdot (A - A_3)}{(A_2 - A_3)^2}$	$\frac{4 \cdot L}{(A_2 - A_3)^2}$ $\frac{4 \cdot L}{(A_2 - A_3)^2}$	$A_2 \leq A < \frac{A_2 + A_3}{2}$ $\frac{A_2 + A_3}{2} \leq A < A_3$
retorno cúbico	$L \cdot \left[1 - 4 \cdot \left(\frac{A_2 - A}{A_2 - A_3} \right)^3 \right]$ $4 \cdot L \cdot \left(\frac{A - A_3}{A_2 - A_3} \right)^3$	$\frac{12 \cdot L \cdot (A - A_2)^2}{(A_2 - A_3)^3}$ $\frac{12 \cdot L \cdot (A - A_3)^2}{(A_2 - A_3)^3}$	$\frac{24 \cdot L \cdot (A - A_2)}{(A_2 - A_3)^3}$ $\frac{24 \cdot L \cdot (A - A_3)}{(A_2 - A_3)^3}$	$A_2 \leq A < \frac{A_2 + A_3}{2}$ $\frac{A_2 + A_3}{2} \leq A < A_3$
retorno senoidal	$\frac{L}{2} \cdot \left[1 - \cos \left[\frac{\pi \cdot (A - A_3)}{A_2 - A_3} \right] \right]$	$\frac{\pi \cdot L}{2 \cdot (A_2 - A_3)} \cdot \sin \left[\frac{\pi \cdot (A - A_3)}{A_2 - A_3} \right]$	$\frac{\pi^2 \cdot L}{2 \cdot (A_2 - A_3)^2} \cdot \cos \left[\frac{\pi \cdot (A - A_3)}{A_2 - A_3} \right]$	$A_2 \leq A < A_3$
retorno cicloidal	$\frac{L}{\pi} \cdot \left[\frac{\pi \cdot (A - A_3)}{A_2 - A_3} - \frac{1}{2} \cdot \sin \left[\frac{2 \cdot \pi \cdot (A - A_3)}{A_2 - A_3} \right] \right]$	$\frac{L}{A_2 - A_3} \cdot \left[1 - \cos \left[\frac{2 \cdot \pi \cdot (A - A_3)}{A_2 - A_3} \right] \right]$	$\frac{2 \cdot \pi \cdot L}{(A_2 - A_3)^2} \cdot \sin \left[\frac{2 \cdot \pi \cdot (A - A_3)}{A_2 - A_3} \right]$	$A_2 \leq A < A_3$