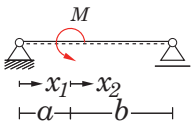
Tabelle A.10.: Einfeldträger mit var. Moment



Randwerte:

$V_{10} = \frac{M}{l}$	`V10:M/l`
$M_{10} = 0$	`M10:0`
$\varphi_{10} = \frac{M(2b^2-2ab-a^2)}{6lEI}$	`phi10:M*(2*b^2-2*a*b-a^2)/(6*l*EI)`
$w_{10} = 0$	`w10:0`
$V_{20} = \frac{M}{l}$	`V20:M/l`
$M_{20} = \frac{-Mb}{l}$	`M20:-M*b/l`
$\varphi_{20} = \frac{M(b^2-ab+a^2)}{3lEI}$	`phi20:M*(b^2-a*b+a^2)/(3*l*EI)`
$w_{20} = \frac{-Mab(b-a)}{3lEI}$	`w20:-M*a*b*(b-a)/(3*l*EI)`

Funktionsgleichungen:

$V(x_1) = \frac{M}{l}$	`Vx1:M/l`
$M(x_1) = \frac{Mx_1}{l}$	`Mx1:M*x1/l`
$\varphi(x_1) = \frac{M(3x_1^2+2b^2-2ab-a^2)}{6lEI}$	`phix1:M*(3*x1^2+2*b^2-2*a*b-a^2)/(6*l*EI)`
$w(x_1) = \frac{-Mx_1(x1^2+2b^2-2ab-a^2)}{6lEI}$	`wx1:-M*x1*(x1^2+2*b^2-2*a*b-a^2)/(6*l*EI)`
$V(x_2) = \frac{M}{l}$	`Vx2:M/l`
$M(x_2) = \frac{M(x_2-b)}{l}$	`Mx2:M*(x2-b)/l`
$\varphi(x_2) = \frac{M(3x_2^2-6bx_2+2b^2-2ab+2a^2)}{6lEI}$	`phix2:M*(3*x2^2-6*b*x2+2*b^2-2*a*b+2*a^2)/(6*l*EI)`
$w(x_2) = \frac{-M(x_2-b)(x_2^2-2bx_2-2ab+2a^2)}{6lEI}$	`wx2:-M*(x2-b)*(x2^2-2*b*x2-2*a*b+2*a^2)/(6*l*EI)`

Auflagerreaktionen:

$A = \frac{M}{l}$ `A:M/l`

$B = \frac{-M}{l}$ `B:-M/l`

Extremwerte:

Wenn a ≥ b M_{max} Bereich 1

$x_{M,max,1} = (x_1 = a)$ `xMmax1:a`

$M_{max,1} = M(x_1 = a)\frac{-Mb}{l}$ `Mmax1:M*a/l`

Wenn a ≤ b M_{max} Bereich 2

$x_{M,max,2} = (x_2 = 0)$ `xMmax2:0`

$M_{max,2} = M(x_2 = 0) = \frac{-Mb}{l}$ `Mmax2:-M*b/l`

Wenn a ≥ b w_{max} Bereich 1

$x_{w,max_1} = \frac{+\sqrt{-2b^2+2ab+a^2}}{\sqrt{3}}$ `xWmax1:sqrt(-2*b^2+2*a*b+a^2)/sqrt(3)`

$w_{max,1} = \frac{-M\sqrt{-2b^2+2ab+a^2}(2b^2-2ab-a^2)}{3^{5/2}lEI}$ `wmax1:-M*sqrt(-2*b^2+2*a*b+a^2)*(2*b^2-2*a*b-a^2)/(3^(5/2)*l*EI)`

Wenn a ≤ b w_{max} Bereich 2

$x_{w,max_2} = \frac{-(\sqrt{3}\sqrt{b^2+2ab-2a^2}-3b)}{3}$ `xWmax2:-(sqrt(3)*sqrt(b^2+2*a*b-2*a^2)-3*b)/3`

$w_{max,2} = \frac{-M(b^2+2ab-2a^2)^{3/2}}{3^{5/2}lEI}$ `wmax2:-M*(b^2+2*a*b-2*a^2)^(3/2)/(3^(5/2)*l*EI)`