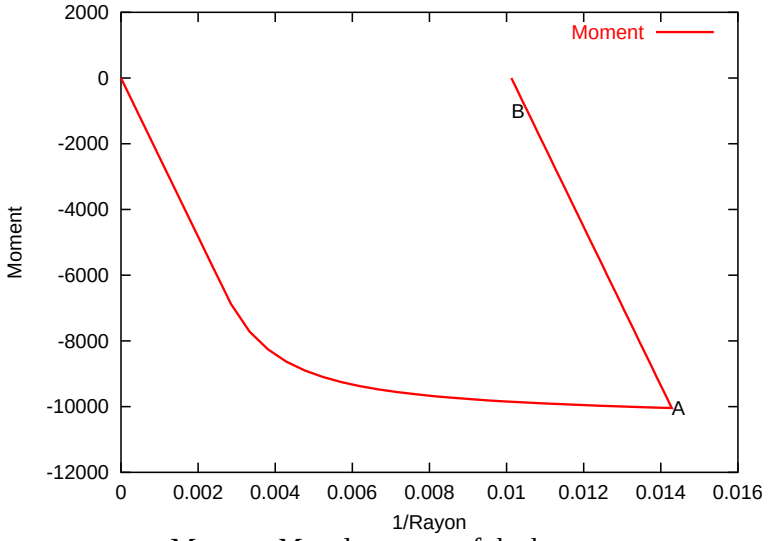
Springback

This sheet allow you to apply a loading-unloading sequence to a beam. The loading is a flexure at a given radius R. Unloading is applied until the extenal moment reaches 0. A time independent plastic model is used , with isotropic and kinematic hardening.

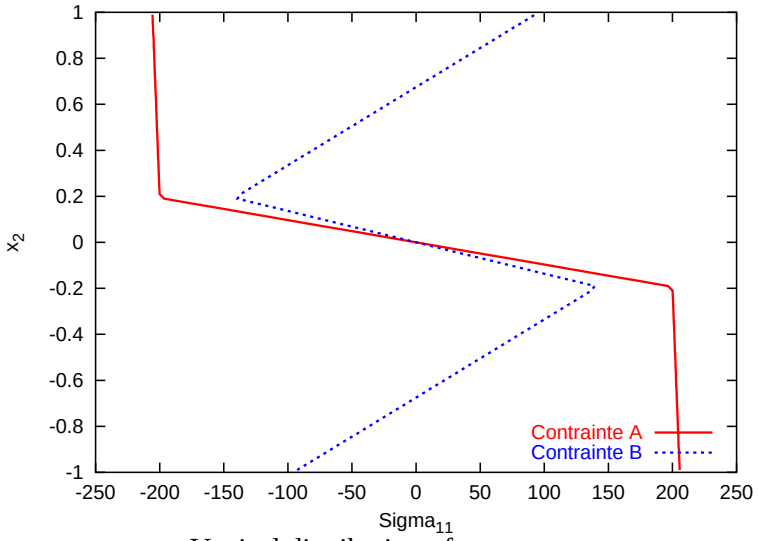
$$f(\sigma, X, R) = |\sigma - X| - R$$

With $R = \sigma_y + Q(1 - e^{-bp})$, $X = C\alpha$ and $\dot{\alpha} = \dot{p} sign e(\sigma - X) - D\alpha\dot{p}$

Use the boxes to specify the prescribed values of R, of the geometry of the beam and the material parameters. *Using $Q = 0$, you can specify a linear isotropic hardening, with a slope b.*



Moment M and curve ω of the beam



Vertical distribution of stress σ_{11}

Current values of R= 70., Width= 50., Thickness= 2.

σ_y= 200., Q= 0., b= 500., E= 72400.

C= 0., D= 0., *Reset* *Go*

Final values M_{max}= -1.00446e+04, R_{final}= 98.7790904421352

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