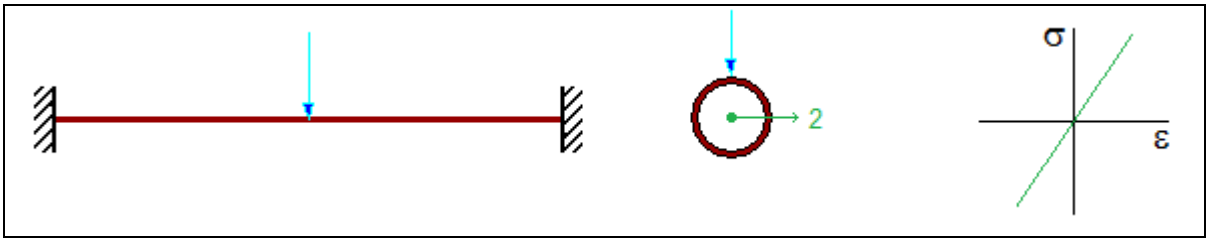
CURAN: BEAMS (HERMITIAN)	TEST 015	rev.1 21/10/13	version 10.70
VALIDATION, CROSS CHECKS, RELIABILITY, BENCHMARK	Tested by: Marco Croci - Checked by: Paolo Rugarli		



MODEL		
MODEL NAME	OUTPUT FILE	ANALYSIS TYPE
curanBE_015.WSR	curanBE_015.CS1.EEN	nonlinear static (Curan)

DATA			
L [mm]	**P [N]**	**E [N/mm^2]**	**I [mm^4]**
1000	3000	210000	6.836E+03

THEORETICAL COMPUTATION

Maximum bending moment and midspan displacement are computed as follows:

$$M_{max} = \frac{PL}{8} \qquad \delta = \frac{PL^3}{192EI}$$

CROSS-CHECK

Value	**Theory**	**Sargon**	**% difference** (S-T)/T*100
M_{max} [Nmm]	3.750E+05	3.750E+05	0.0
δ [mm]	1.088E+01	1.090E+01	0.1

NOTES
- Solver was forced to work using fiber model even if material is linear elastic, to test this condition as well.
- force is parallel to cross-section axis 3.
- shear area: not considered.
- Analysis parameters: Lobatto's points: 5. Fibers number: 250
- Beam elements number: 2

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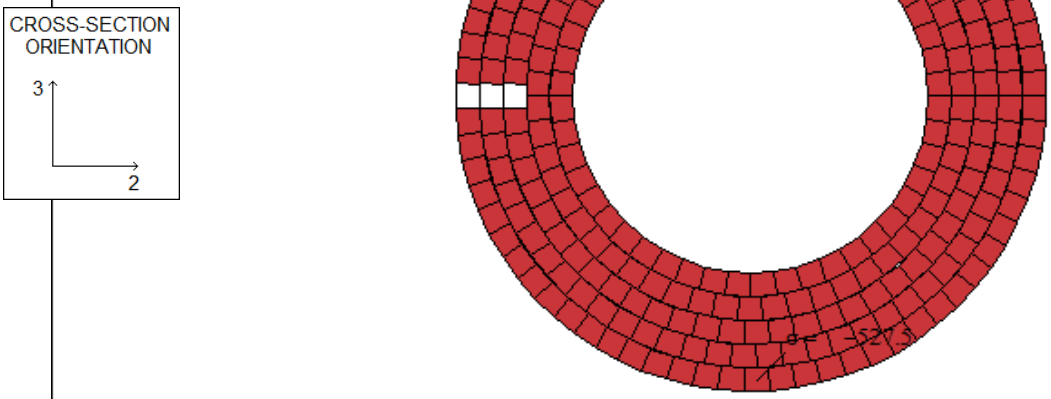
NONLINEAR FIBER MODEL ANALYSIS RESULTS - NORMAL STRESS
Beam #1 Lobatto's section #1 (csi = -1.000) Lcase = 1 / 1
Sigma, max= 527.5 N/mm²; Sigma, min= -527.5 N/mm²;



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