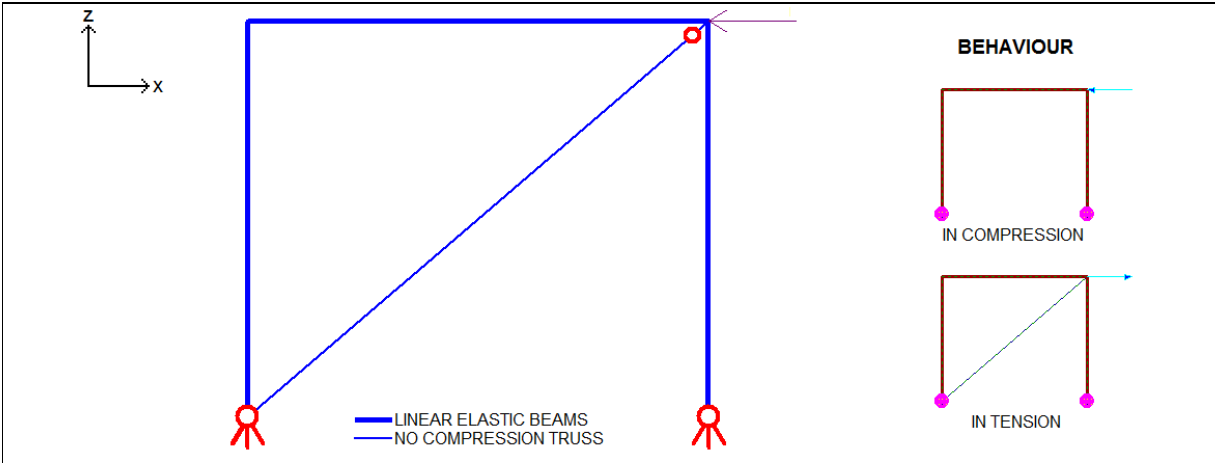


Validation of Sargon Nonlinear solver (CURAN, version 9.60)

TEST TR002

VALIDATION, RELIABILITY, BENCHMARK

Marco Croci Rev.2-06/12/2010



Test description

Constitutive law of truss material: indefinitely elastic, no compression.  
 In load case 1 the truss is in compression and does not work; in load case 2 the truss is in tension, so it works.

Test model: **curanTR\_002.WSR**

Beams material properties (tension and compression)

Name	$\nu$	E
S235	0,3	210000N/mm <sup>2</sup>

Truss material properties (no compression)

Name	$\nu$	E
S235NC	0,3	210000N/mm <sup>2</sup>

**Cross-section:** circular section, diameter=40mm (area=1256,64mm<sup>2</sup>)

Force (x direction)

Load case 1	F = -300000N
Load case 2	F = +300000N
Load path: not active	

CHECK

Load case	Value	Unit	CURAN	THEORETICAL	% diff.
1	Truss #1 axial force	N	0,000E+00	0,000E+00	0,00
1	Beam #1 axial force	mm	-2,571E+05	-2,571E+05	0,00
2	Truss #1 axial force	N	3,918E+05	3,918E+05	0,00
2	Beam #1 axial force	mm	2,147E+03	2,147E+03	0,00

% difference = (CURAN - THEORETICAL) / THEORETICAL \* 100

Precision of limit multiplier for the analysis: 0.005