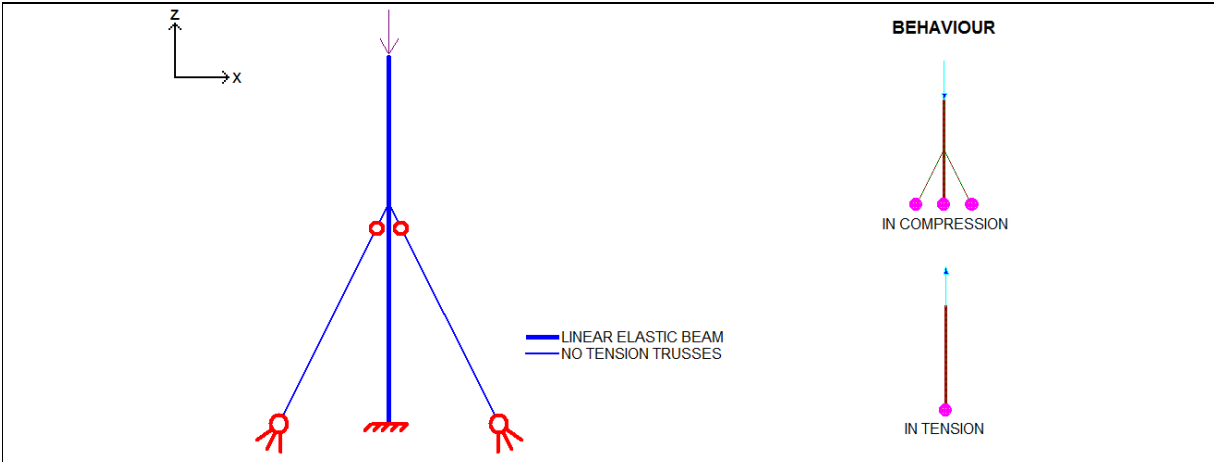


Validation of Sargon Nonlinear solver (CURAN, version 9.60)

TEST TR003

VALIDATION, RELIABILITY, BENCHMARK

Marco Croci Rev.2-06/12/2010



Test description

Constitutive law of trusses material: indefinitely elastic, no tension. In load case 1 trusses are in compression, so they work; in load case 2 trusses are in tension and do not work.

Test model: curanTR\_003.WSR

Beam material properties (tension and compression)

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

Trusses material properties (no tension)

Name	$\nu$	E
S235NT	0,3	210000N/mm <sup>2</sup>

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

Force (z direction)

Load case 1	F = -1000000N
Load case 2	F = +1000000N
Load path: not active	

CHECK

Load case	Value	Unit	CURAN	THEORETICAL	% diff.
1	Truss #1 axial force	N	3,291E+05	3,291E+05	0,00
1	Beam #1 axial force	mm	-4,113E+05	-4,113E+05	0,00
2	Truss #1 axial force	N	0,000E+00	(0,000E+00)	0,00
2	Beam #1 axial force	mm	1,000E+06	1,000E+06	0,00

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

Precision of limit multiplier for the analysis: 0.005