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TrussPy - Object Oriented Truss Solver for Python
          Version 2019.08 (Build 201908)

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        Graz University of Technology, 2018-2019

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```

Initialize Model

- loading Managers
  - finished.

[1 2 3] [2] [True False True] [1 2 3] [2 1 3] [False False False]

Model Summary

```
Analysis Dimension      "ndim": 3
Number of Nodes       "nnodes": 3
Number of Elements    "nelems": 2

System DOF              "ndof": 9
active DOF             "ndof1": 1
locked DOF             "ndof2": 8

active DOF          "nproDOF1": [5]
fixed  DOF          "nproDOF0": [0 1 2 3 4 6 7 8]
```

Run Simulation

Summary of Analysis Parameters

Description	Parameter	Value
Maximum increments	`incs`	10
Maximum increment recycles	`cycl`	4
Maximum Newton-Rhapson iterations	`nfev`	8
Maximum incremental displacement	`du`	0.02
Maximum incremental LPF	`dlpf`	0.02
Initial control component	`j0`	LPF
Locked control component	`j_fixed`	False
Maximum incremental overshoot	`dxtol`	1.000001
Tolerance for x	`xtol`	8
Tolerance for f	`ftol`	8

Adaptive control for incremental stepwidth

Description	Parameter	Value
Adaptive control for inc. stepwidth	`stepcontrol`	True
Minimum step size factor	`minfac`	1e-06
Maximum step size factor	`maxfac`	4
Reduce step size factor	`reduce`	0.125
Increase step size factor	`increase`	0.5

Step 1

- i(1) is index with 1st-biggest component in abs(Dx/Dx,max).
- i(2) is index with 2nd-biggest component in abs(Dx/Dx,max).
- i(3) is index with 3rd-biggest component in abs(Dx/Dx,max).
- i(4) is index with 4th-biggest component in abs(Dx/Dx,max).
- Value(i) is value of i-th component in abs(Dx/Dx,max).

$$\text{Value}_i = \left| \frac{D_x}{D_{x,max}} \right|_i$$

Increment 1

Cycle	NR-It.	Control	Norm(g)	i(1)	Value	i(2)	Value	i(3)	Value
1	0	2	4.303e-04	1	-1				

Cycle	NR-It.	Control	Norm(g)	i(1)	Value	i(2)	Value	i(3)	Value
	1		0.000e+00						
	2		0.000e+00						
total	sum	used	final		final		final		final
1	3	-1	0.000e+00	1	-1.0000	2	0.6964	0	nan

- increase NR-step size by factor: 1.36
- final LPF: 0.01393

Increment 2

Cycle	NR-It.	Control	Norm(g)	i(1)	Value	i(2)	Value	i(3)	Value
1	0	-1	4.079e-04	1	-1				

Cycle	NR-It.	Control	Norm(g)	i(1)	Value	i(2)	Value	i(3)	Value
	1		0.000e+00						
	2		0.000e+00						
total	sum	used	final		final		final		final
1	3	-1	0.000e+00	1	-1.0000	2	0.6705	0	nan

- increase NR-step size by factor: 1.36
- final LPF: 0.03213

Increment 3

Cycle	NR-It.	Control	Norm(g)	i(1)	Value	i(2)	Value	i(3)	Value
1	0	-1	7.852e-04	1	-1				

Cycle	NR-It.	Control	Norm(g)	i(1)	Value	i(2)	Value	i(3)	Value
	1		0.000e+00						

Cycle	NR-It.	Control	Norm(g)	i(1)	Value	i(2)	Value	i(3)	Value
	2		0.000e+00						
total	sum	used	final		final		final		final
1	3	-1	0.000e+00	1	-1.0000	2	0.6340	0	nan

- increase NR-step size by factor: 1.36
- final LPF: 0.05548

Increment 4

Cycle	NR-It.	Control	Norm(g)	i(1)	Value	i(2)	Value	i(3)	Value
1	0	-1	1.532e-03	1	-1				

Cycle	NR-It.	Control	Norm(g)	i(1)	Value	i(2)	Value	i(3)	Value
	1		0.000e+00						
	2		0.000e+00						
total	sum	used	final		final		final		final
1	3	-1	0.000e+00	1	-1.0000	2	0.5817	0	nan

- increase NR-step size by factor: 1.36
- final LPF: 0.08456

Increment 5

Cycle	NR-It.	Control	Norm(g)	i(1)	Value	i(2)	Value	i(3)	Value
1	0	-1	3.040e-03	1	-1				

Cycle	NR-It.	Control	Norm(g)	i(1)	Value	i(2)	Value	i(3)	Value
	1		0.000e+00						
	2		0.000e+00						
total	sum	used	final		final		final		final
1	3	-1	0.000e+00	1	-1.0000	2	0.5055	0	nan

- increase NR-step size by factor: 1.36

- final LPF: 0.1189

Increment 6

Cycle	NR-It.	Control	Norm(g)	i(1)	Value	i(2)	Value	i(3)	Value
1	0	-1	6.131e-03	1	-1				

Cycle	NR-It.	Control	Norm(g)	i(1)	Value	i(2)	Value	i(3)	Value
	1		0.000e+00						
	2		0.000e+00						
total	sum	used	final		final		final		final
1	3	-1	0.000e+00	1	-1.0000	2	0.3928	0	nan

- final LPF: 0.155

Increment 7

Cycle	NR-It.	Control	Norm(g)	i(1)	Value	i(2)	Value	i(3)	Value
1	0	-1	5.048e-03	1	-1				

Cycle	NR-It.	Control	Norm(g)	i(1)	Value	i(2)	Value	i(3)	Value
	1		0.000e+00						
	2		0.000e+00						
total	sum	used	final		final		final		final
1	3	-1	0.000e+00	1	-1.0000	2	0.2609	0	nan

- final LPF: 0.1759

Increment 8

Cycle	NR-It.	Control	Norm(g)	i(1)	Value	i(2)	Value	i(3)	Value
1	0	-1	5.338e-03	1	-1				

Cycle	NR-It.	Control	Norm(g)	i(1)	Value	i(2)	Value	i(3)	Value

Cycle	NR-It.	Control	Norm(g)	i(1)	Value	i(2)	Value	i(3)	Value
	1		0.000e+00						
	2		0.000e+00						
total	sum	used	final		final		final		final
1	3	-1	0.000e+00	1	-1.0000	2	0.1297	0	nan

- final LPF: 0.1863

Increment 9

Cycle	NR-It.	Control	Norm(g)	i(1)	Value	i(2)	Value	i(3)	Value
1	0	-1	5.483e-03	1	-1				

Cycle	NR-It.	Control	Norm(g)	i(1)	Value	i(2)	Value	i(3)	Value
	1		0.000e+00						
	2		0.000e+00						
total	sum	used	final		final		final		final
1	3	-1	0.000e+00	1	-1.0000	2	-0.0064	0	nan

- final LPF: 0.1858

Increment 10

Cycle	NR-It.	Control	Norm(g)	i(1)	Value	i(2)	Value	i(3)	Value
1	0	-1	5.419e-03	1	-1				

Cycle	NR-It.	Control	Norm(g)	i(1)	Value	i(2)	Value	i(3)	Value
	1		0.000e+00						
	2		0.000e+00						
total	sum	used	final		final		final		final
1	3	-1	0.000e+00	1	-1.0000	2	-0.1427	0	nan

- final LPF: 0.1743

Create result object from analysis results for step 1

```
write result   1/ 10 (LPF:    0.01393)
write result   2/ 10 (LPF:    0.03213)
write result   3/ 10 (LPF:    0.05548)
write result   4/ 10 (LPF:    0.08456)
write result   5/ 10 (LPF:     0.1189)
write result   6/ 10 (LPF:      0.155)
write result   7/ 10 (LPF:     0.1759)
write result   8/ 10 (LPF:     0.1863)
write result   9/ 10 (LPF:     0.1858)
write result  10/ 10 (LPF:     0.1743)
```

End of Step 1

Job duration

Time measurement for execution times of “Model.build()” and “Model.run()”.

```
total  cpu time "build":      0.001 seconds
total wall time "build":      0.000 seconds

total  cpu time "run":        0.113 seconds
total wall time "run":        0.125 seconds
```