


We work with a model with the following data:

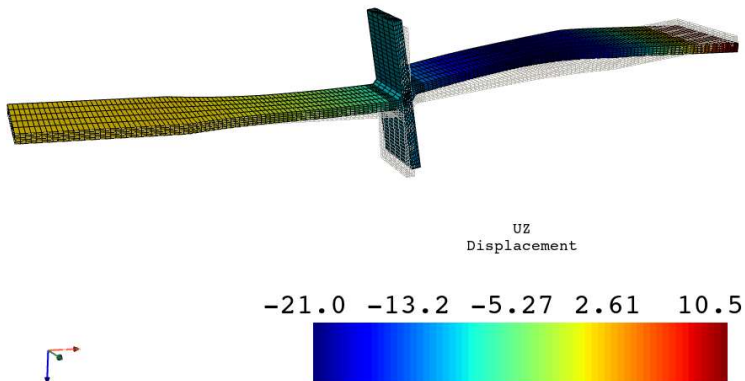
 C:\Python\python.exe

```
ANSYS Mesh
Number of Nodes:      28817
Number of Elements:   5461
Number of Element Types:  2
Number of Node Components: 2
Number of Element Components: 2
```

We listed the master node for the CERIG-command in the first position of the node list (1). We have on load step with one substep. We are able to plot the displacements with the command `result.displacement ('0',comp='Z')`:

```
result.plot_nodal_displacement(0, 'Z',  
                                show_displacement = True,  
                                displacement_factor = 1.0,  
                                scalar_bar_args=({'height': 0.25, 'vertical': False,  
                                                  'interactive': False}),  
                                background='w',  
                                text_color='k',  
                                show_edges=True,  
                                off_screen=True,  
                                cpos = pos_1,  
                                overlay_wireframe=True,  
                                screenshot = Variable+str(par)+'13'+'.png')
```

```
Cumulative Index: 1  
Loadstep:        1  
Substep:         1  
Time Value:      1.0000
```

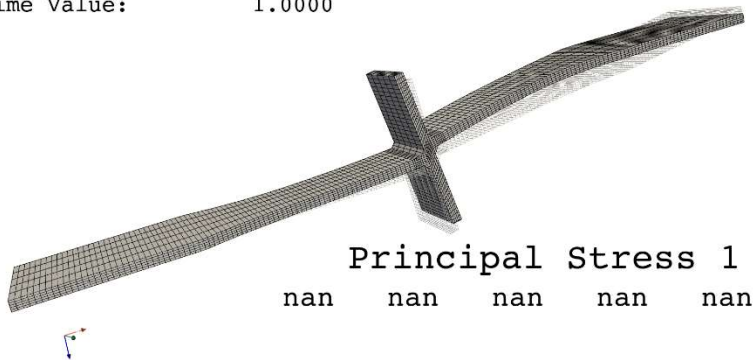


But we are not able to plot the principal stresses with the following command:

```
result.plot_principal_nodal_stress(0, 'S1',  
    show_displacement = True,  
    displacement_factor = 1.0 ,  
    scalar_bar_args=({'height': 0.25, 'vertical': False,  
    'interactive': False}),  
    background='w',  
    text_color='k',  
    show_edges=True,  
    off_screen=False,  
    cpos = 'iso',  
    overlay_wireframe=True)
```

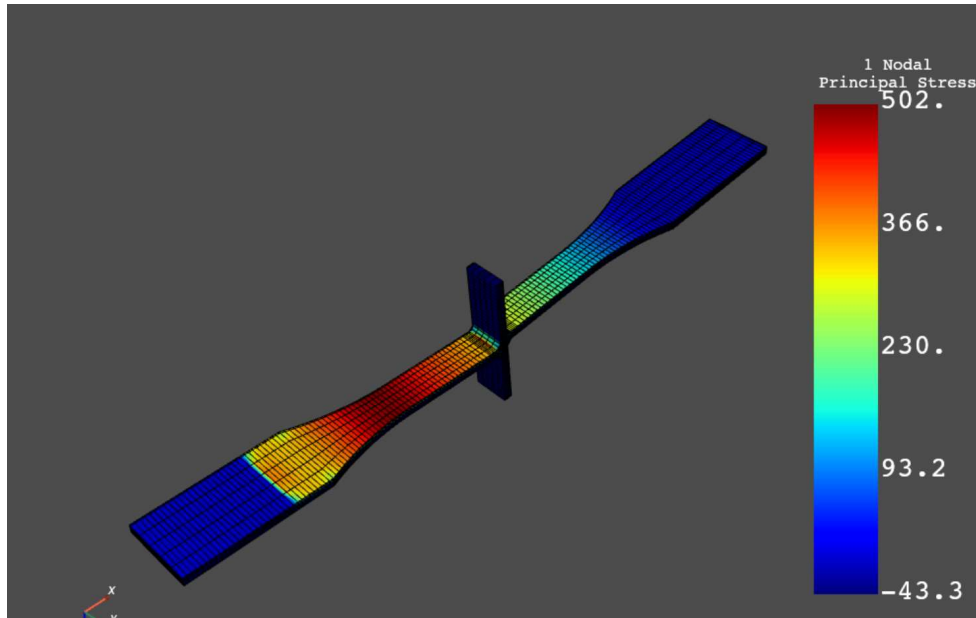
In the result-plot the principle stress is always defined as “nan”:

```
Cumulative Index: 1  
Loadstep: 1  
Substep: 1  
Time Value: 1.0000
```



When we tried to use the following mapdl-commands, we were able to plot the principal stress:

```
mapdl.post_processing.plot_nodal_principal_stress('1', off_screen=False, cpos = pos_2,  
show_edges=True)
```



When we tried to define the MASS21 element without the CERIG-command and plotted the principal stress, the following error occurred:

operands could not be broadcast together with shapes

(28816,3)

We also tried to define the nodal components and element components. The master-slave-node and the MASS21-element are in the first place of the node- and element-list. Therefore, the nodal components and the element components of the mesh starts in the second place of the list:

```
mapdl.nsel("S", "Node", vmin=2, vmax=28817)
mapdl.cm('COMPONET1', 'NODE')

mapdl.esel("S", "ELEM", vmin=2, vmax=5461)
mapdl.cm('COMPONET3', 'ELEM')
```

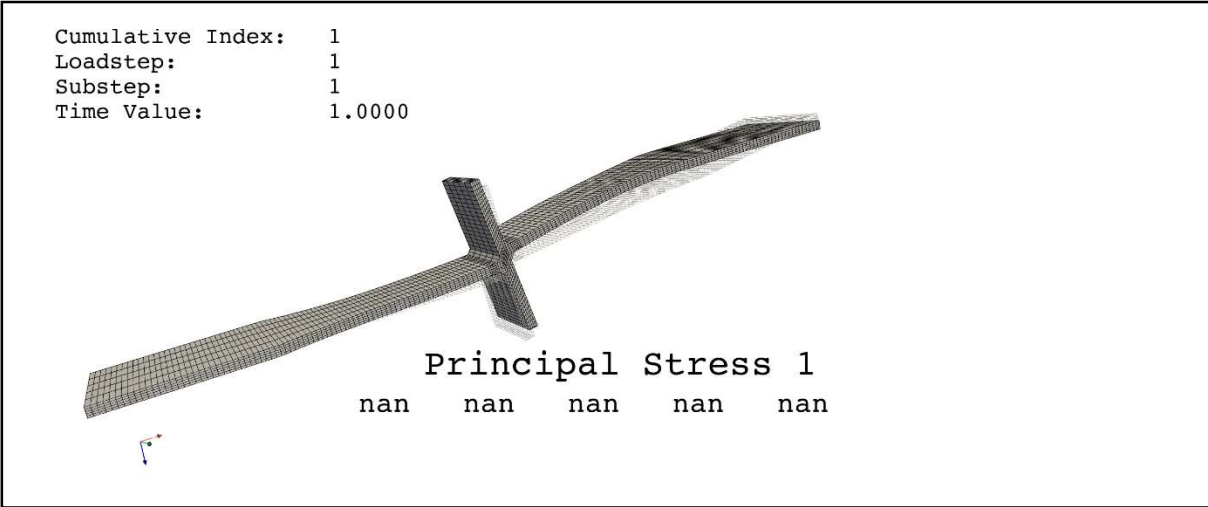
The plot of the array of the nodal-stress without the master-node looks like this (there is always “nan” plotted in between the results):

```
[array([ 9.56508650e-...2980e-08]), array([-1038.3125 ...33609009]), array([nan, nan,
nan...nan, nan]), array([ 4.16359908e-...4910e-08]), array([nan, nan, nan...nan, nan]), array([
1.64415601e-...1396e-08]), array([nan, nan, nan...nan, nan]), array([ 4.11745820e-...9198e-
07]), array([nan, nan, nan...nan, nan]), array([ 1.01791290e-...4304e-07]), array([nan, nan,
nan...nan, nan]), array([ 2.50644327e-...9834e-07]), array([nan, nan, nan...nan, nan]), array([
6.16813708e-...7811e-06]), ...]
```

The plot of the array of the nodal-stress with the master-node looks like this (there is always “nan” plotted in the first line and in between the results):

```
array([[ nan, nan, nan, nan, nan, nan, nan],
 [ 9.56508650e-09, 9.22445054e-09, 2.13051603e-08,
 -4.82891609e-11, -2.05281547e-09, -1.25642980e-08],
 [-1.03831250e+03, -1.17768173e+02, 5.51894657e+02,
 -5.22429117e+02, 3.66019928e+02, 5.26336090e+02],
 ...,
 [ nan, nan, nan, nan, nan, nan, nan],
 [ nan, nan, nan, nan, nan, nan, nan],
 [ nan, nan, nan, nan, nan, nan, nan]])
```

The plot of the stresses are still not displayed correctly ("nan"):



We still have the same issue, when we list the MASS21 node and element at the end of the node-list and element-list.

Since we cannot find a solution for our problem, we would be very happy, if you could give us some input, how to find a solution.

Please do not hesitate to contact us at any time, if you have any further questions.

Thank you a lot for your help!