Verification of freesif test-data

Datasets have been established for testing of freesif. This document compares these datasets visualized in Paraview to the original data visualized in Xtract.

All datasets and .vtu-files have been created with freesif and the verified datasets will be used as basis for freesif testing.

All the verified datasets are located in ‘*tests/files/verified\_testdata.h5’* in the freesif repository. All the vtu-files are located in ‘*tests/files/vtu’* directory.

# test01\_1stord\_linstat\_R1

## LD\_plates (triangular elements)

### Element results

#### General stress

|  |  |
| --- | --- |
| Component, Layer | SIGXX, Upper |
| Dataset | test01\_1stord\_linstat\_R1/LD\_plates/elemres/generalstress |
| Vtu-file | test01\_1stord\_linstat\_R1\_LD\_plates\_elemres.vtu |
| Xtract: | |
| Paraview: | |

|  |  |
| --- | --- |
| Component, Layer | SIGYY, Upper |
| Dataset | test01\_1stord\_linstat\_R1/LD\_plates/elemres/generalstress |
| Vtu-file | test01\_1stord\_linstat\_R1\_LD\_plates\_elemres.vtu |
| Xtract: | |
| Paraview: | |

|  |  |
| --- | --- |
| Component, Layer | TAUXY, Upper |
| Dataset | test01\_1stord\_linstat\_R1/LD\_plates/elemres/generalstress |
| Vtu-file | test01\_1stord\_linstat\_R1\_LD\_plates\_elemres.vtu |
| Xtract: | |
| Paraview: | |

|  |  |
| --- | --- |
| Component, Layer | VONMISES, Upper |
| Dataset |  |
| Vtu-file |  |
| Xtract: | |
|  | |

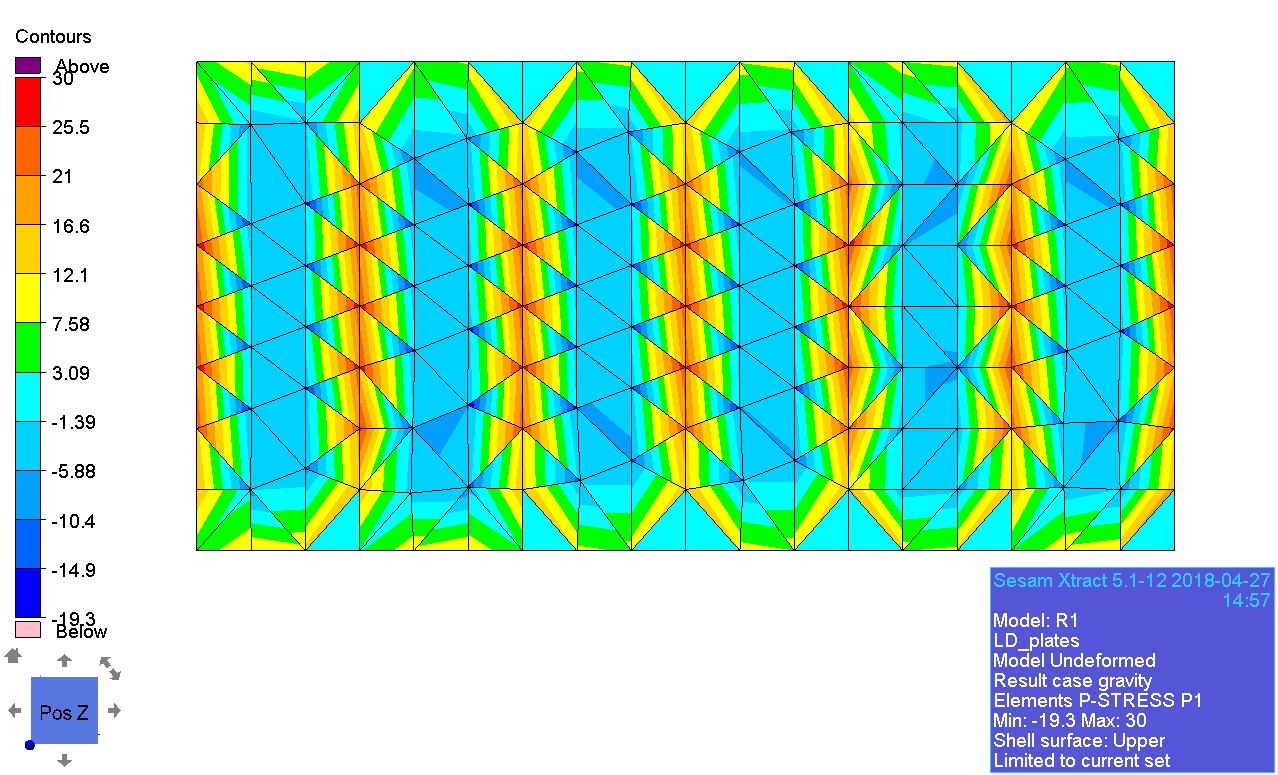
|  |  |
| --- | --- |
| Component, Layer | SIGXX, Lower |
| Dataset | test01\_1stord\_linstat\_R1/LD\_plates/elemres/generalstress |
| Vtu-file | test01\_1stord\_linstat\_R1\_LD\_plates\_elemres.vtu |
| Xtract: | |
| Paraview: | |

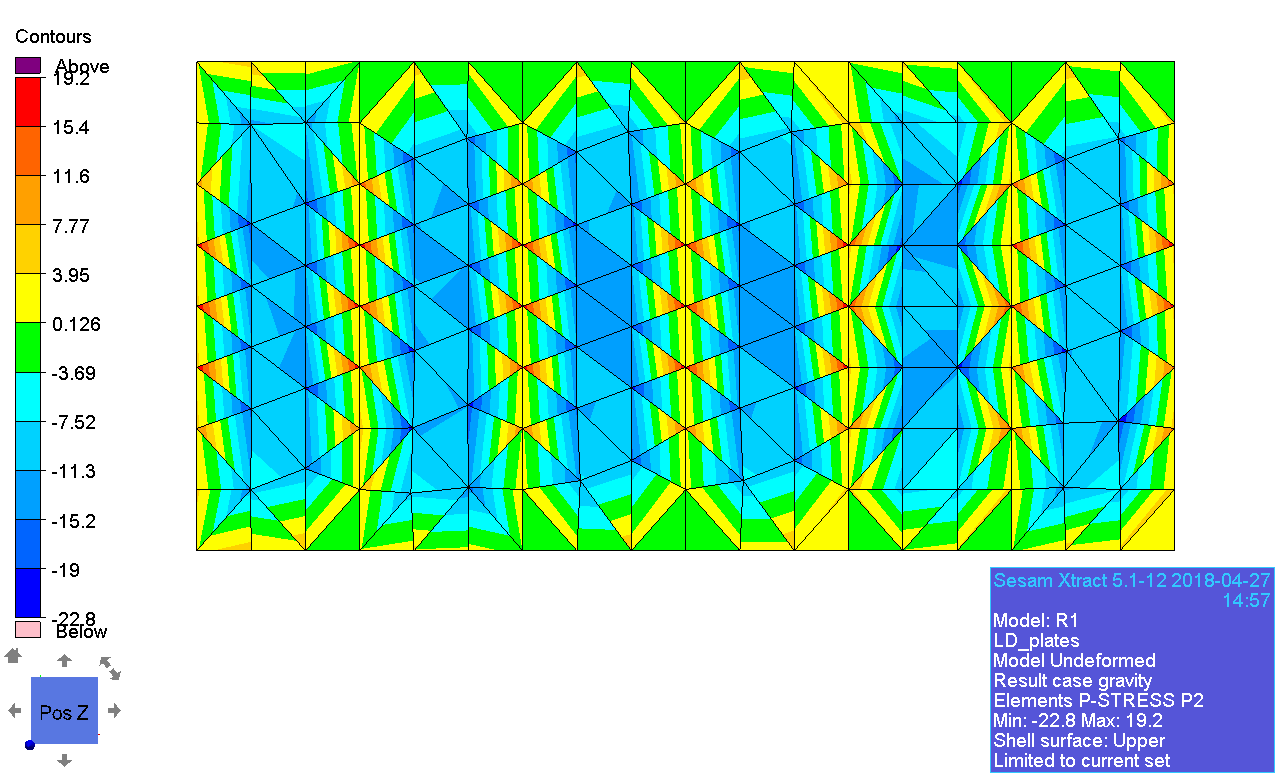
|  |  |
| --- | --- |
| Component, Layer | SIGYY, Lower |
| Dataset | test01\_1stord\_linstat\_R1/LD\_plates/elemres/generalstress |
| Vtu-file | test01\_1stord\_linstat\_R1\_LD\_plates\_elemres.vtu |
| Xtract: | |
| Paraview: | |

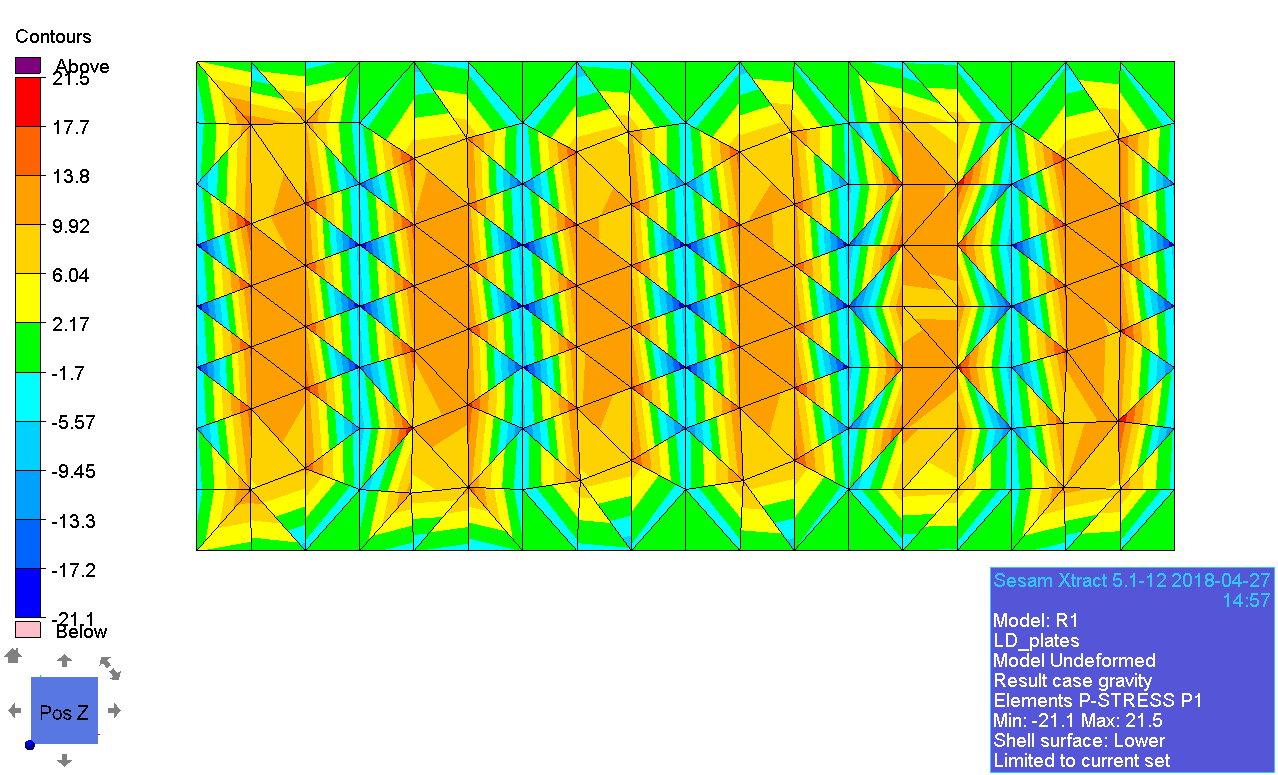
|  |  |
| --- | --- |
| Component, Layer | TAUXY, Lower |
| Dataset | test01\_1stord\_linstat\_R1/LD\_plates/elemres/generalstress |
| Vtu-file | test01\_1stord\_linstat\_R1\_LD\_plates\_elemres.vtu |
| Xtract: | |
| Paraview: | |

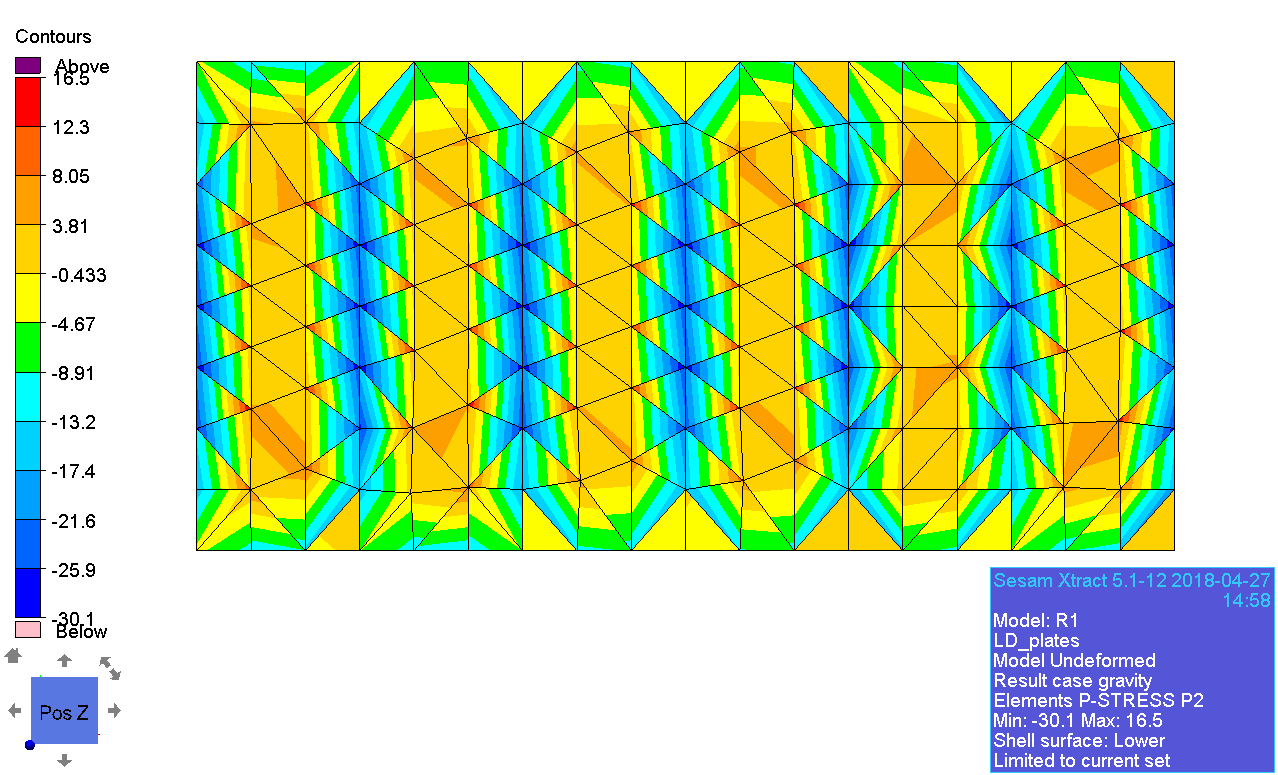
|  |  |
| --- | --- |
| Component, Layer | VONMISES, Lower |
| Dataset |  |
| Vtu-file |  |
| Xtract: | |
|  | |

#### Principal stress

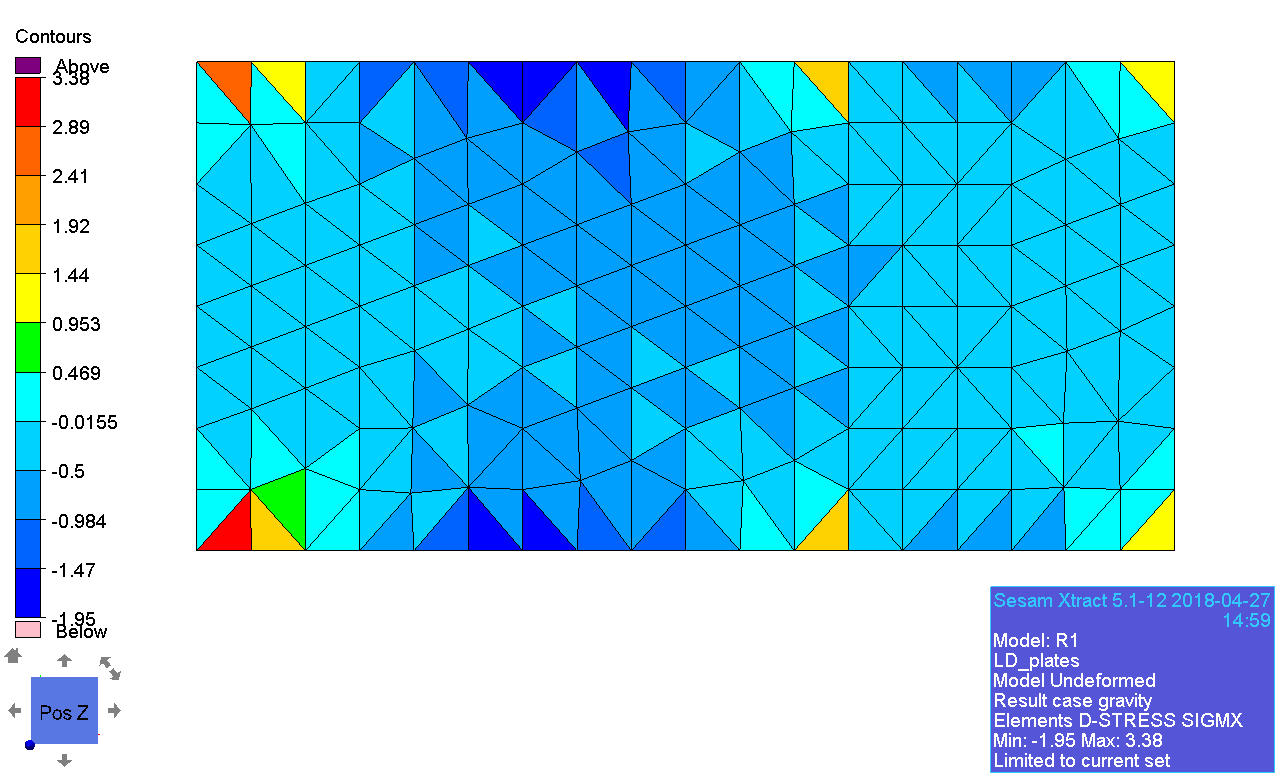


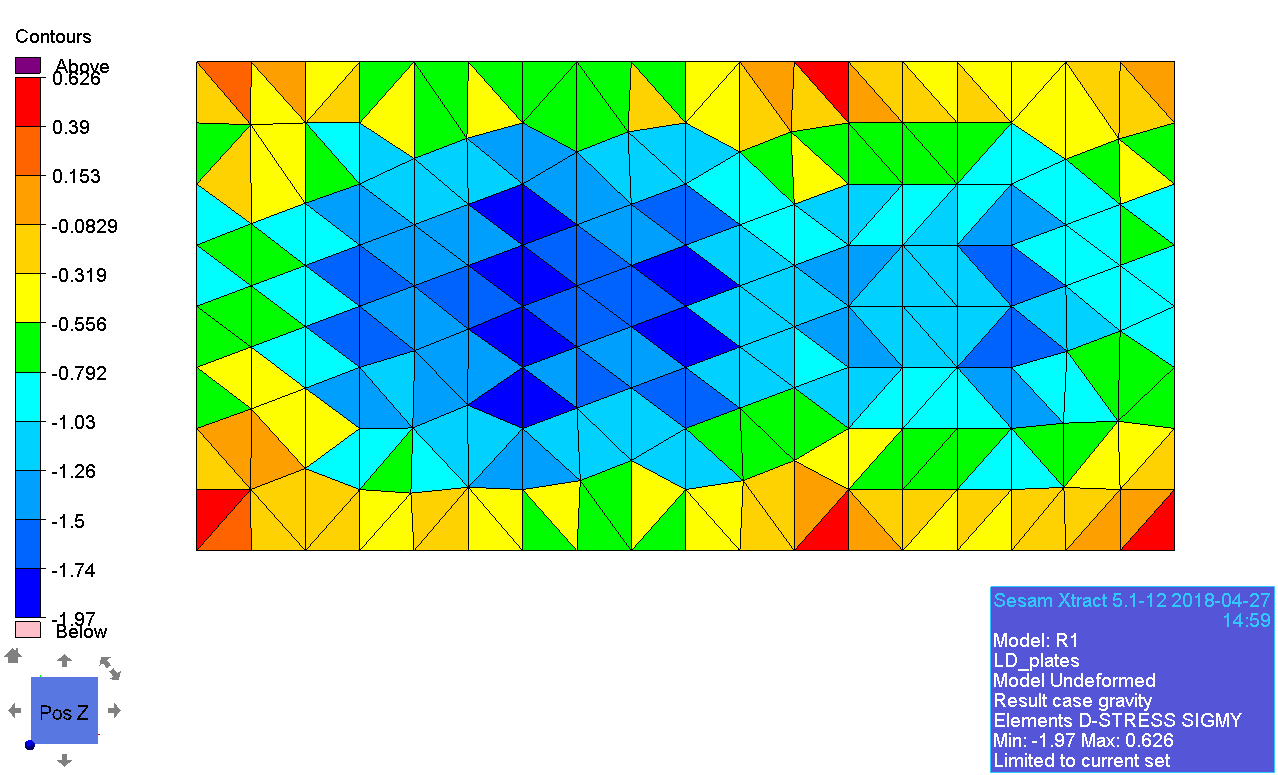


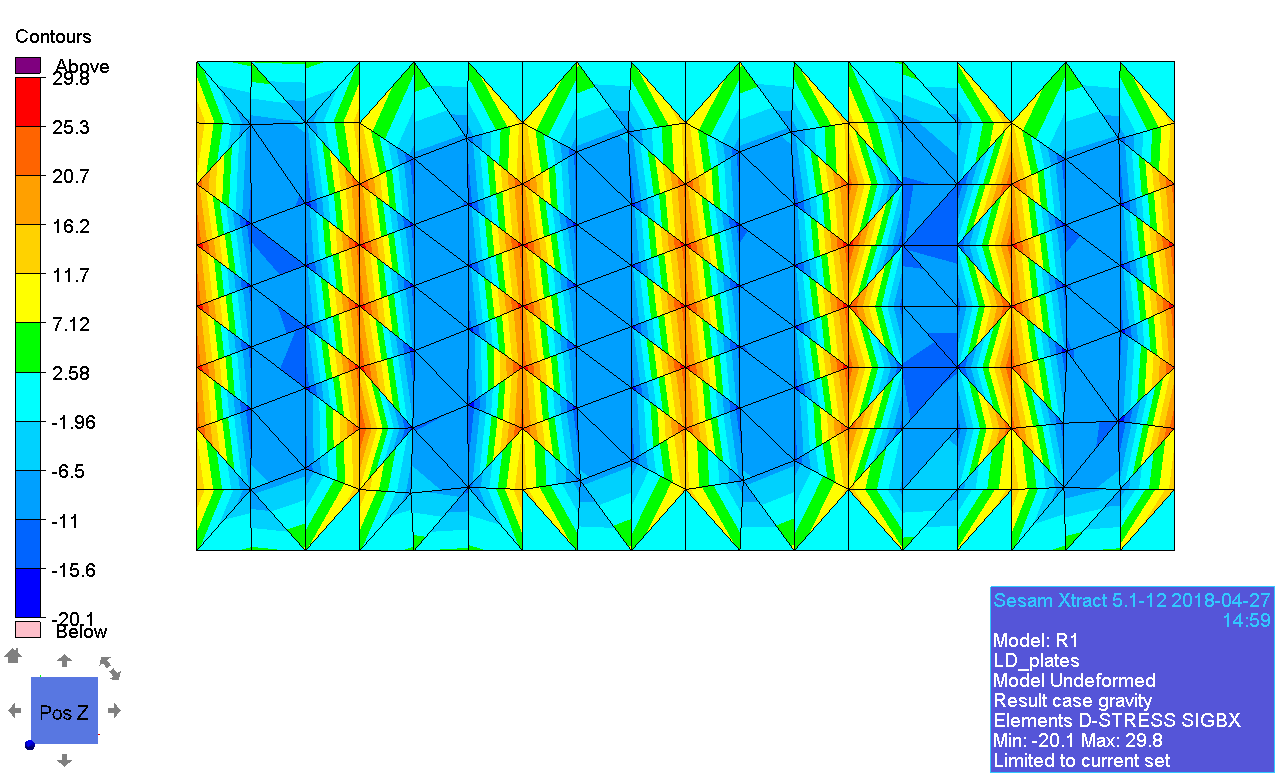


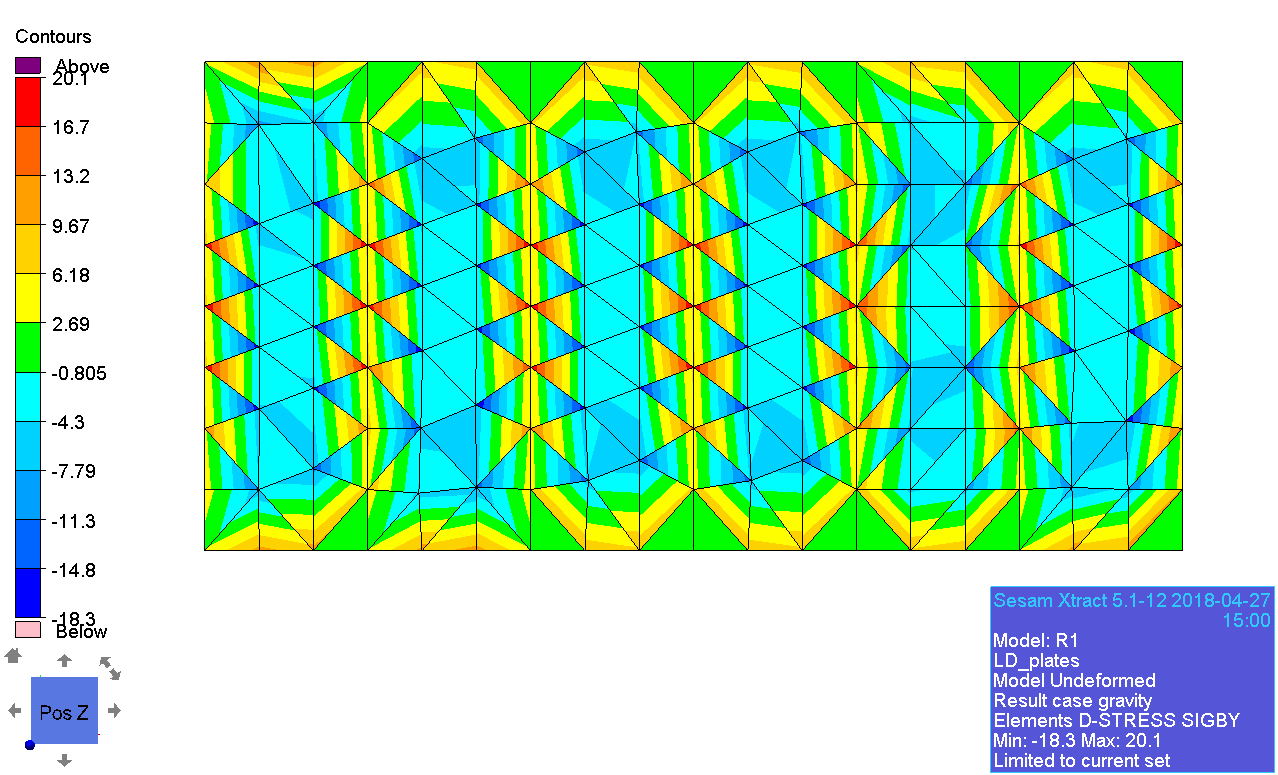


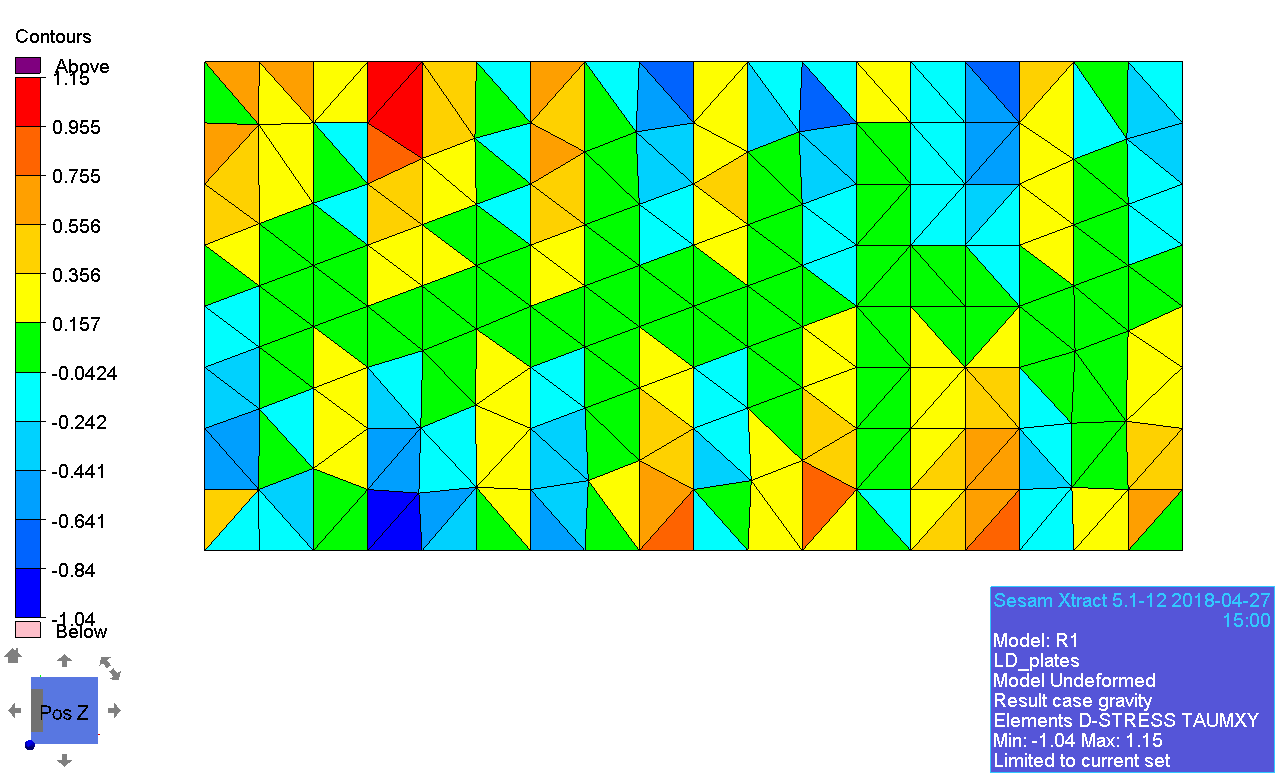
#### Decomposed stress

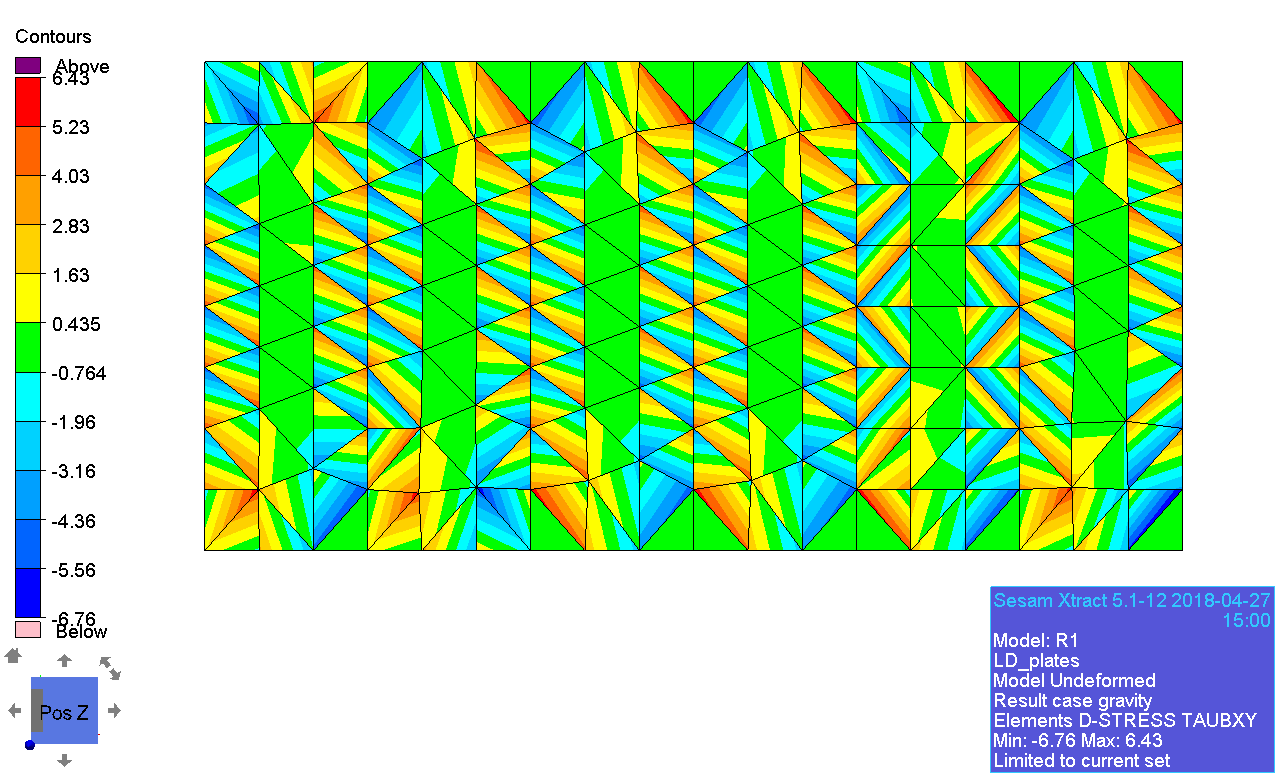


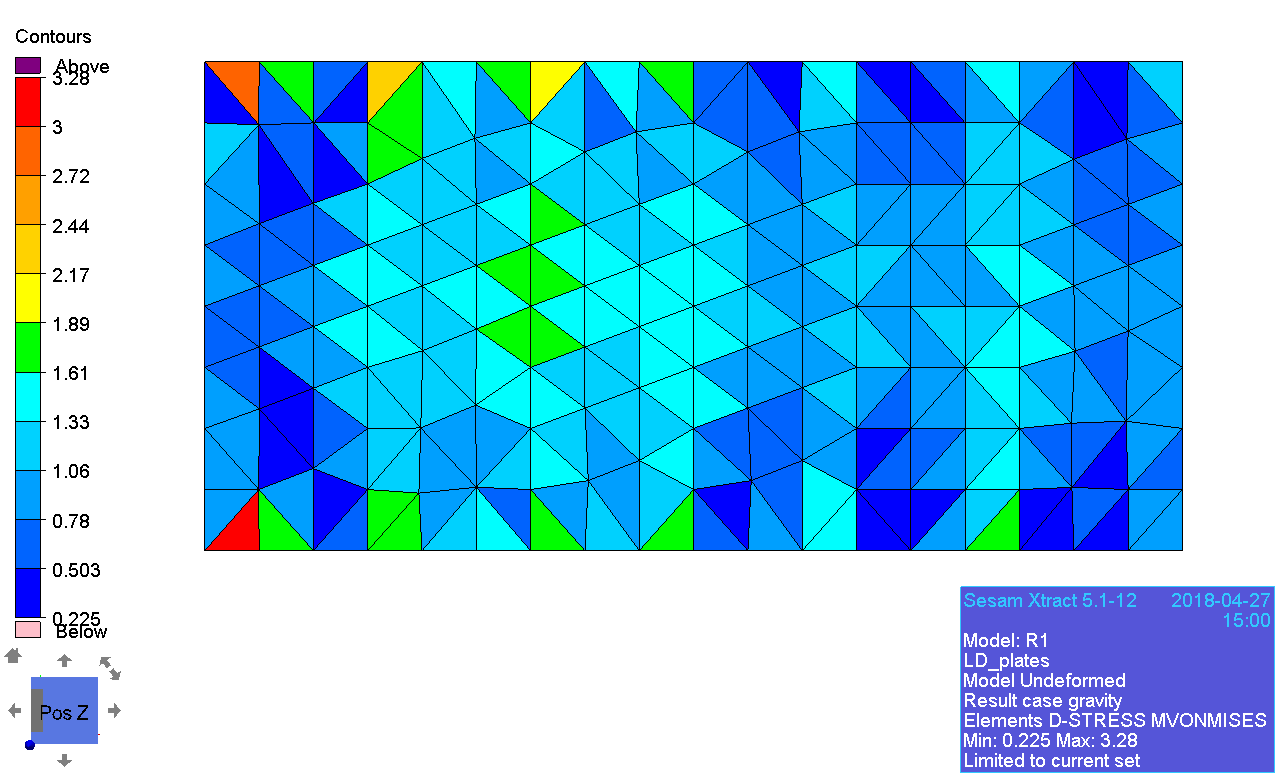




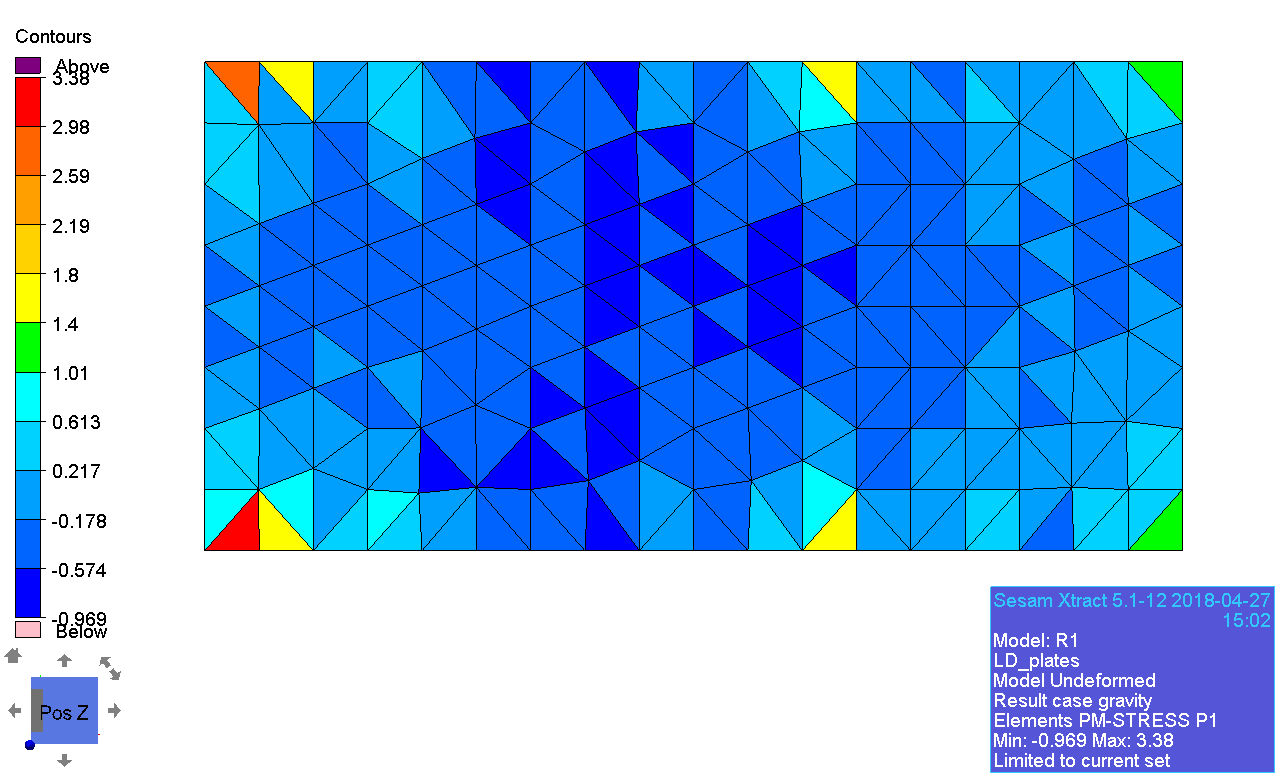


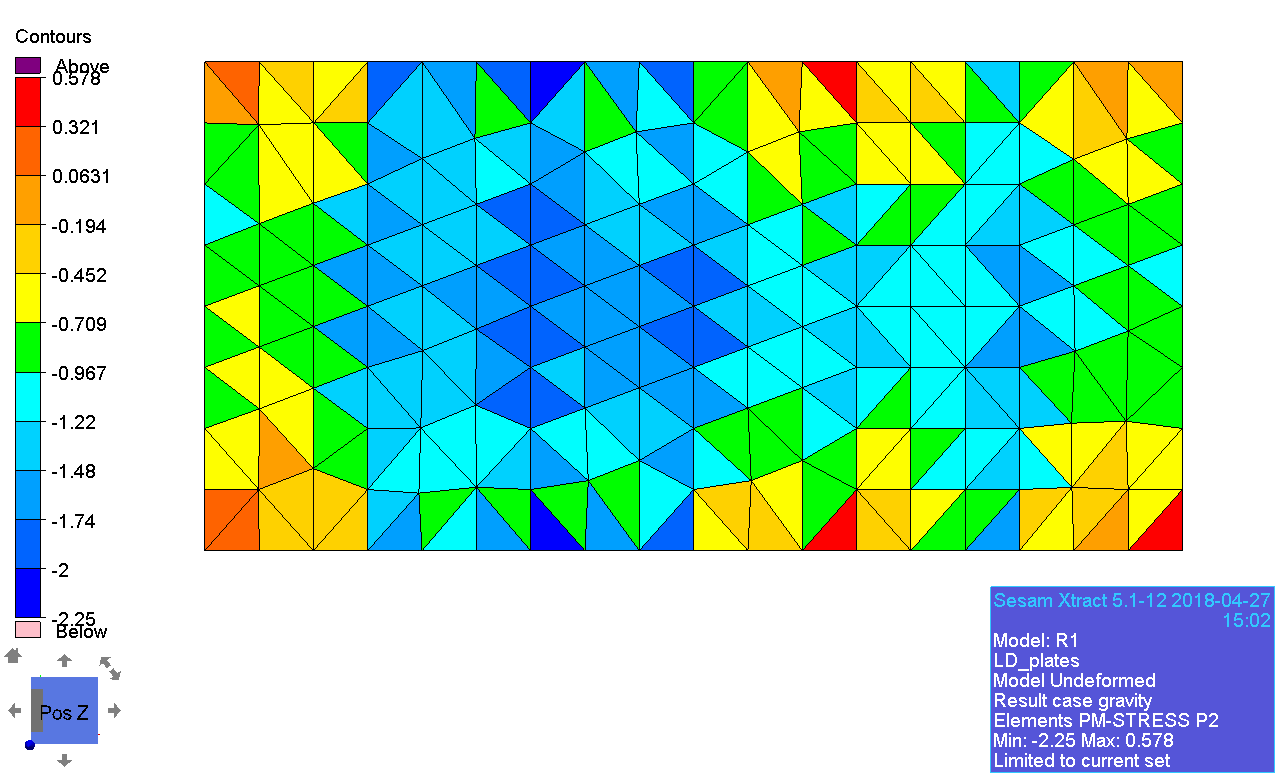






#### Membrane Principal stress





### Node results

#### Displacement

|  |  |
| --- | --- |
| Component | X |
| Dataset | test01\_1stord\_linstat\_R1/LD\_plates/noderes/displacement |
| Vtu-file | test01\_1stord\_linstat\_R1\_LD\_plates\_noderes.vtu |
| Xtract: | |
| Paraview: | |

|  |  |
| --- | --- |
| Component | Y |
| Dataset | test01\_1stord\_linstat\_R1/LD\_plates/noderes/displacement |
| Vtu-file | test01\_1stord\_linstat\_R1\_LD\_plates\_noderes.vtu |
| Xtract: | |
| Paraview | |

|  |  |
| --- | --- |
| Component | Z |
| Dataset | test01\_1stord\_linstat\_R1/LD\_plates/noderes/displacement |
| Vtu-file | test01\_1stord\_linstat\_R1\_LD\_plates\_noderes.vtu |
| Xtract: | |
| Paraview: | |

|  |  |
| --- | --- |
| Component | RX |
| Dataset | test01\_1stord\_linstat\_R1/LD\_plates/noderes/displacement |
| Vtu-file | test01\_1stord\_linstat\_R1\_LD\_plates\_noderes.vtu |
| Xtract: | |
| Paraview: | |

|  |  |
| --- | --- |
| Component | RY |
| Dataset | test01\_1stord\_linstat\_R1/LD\_plates/noderes/displacement |
| Vtu-file | test01\_1stord\_linstat\_R1\_LD\_plates\_noderes.vtu |
| Xtract: | |
| Paraview: | |

|  |  |
| --- | --- |
| Component | RZ |
| Dataset | test01\_1stord\_linstat\_R1/LD\_plates/noderes/displacement |
| Vtu-file | test01\_1stord\_linstat\_R1\_LD\_plates\_noderes.vtu |
| Xtract: | |
| Paraview: | |

## LD\_beams

### Beam forces

|  |  |
| --- | --- |
| Component | NXX |
| Dataset | test01\_1stord\_linstat\_R1/LD\_beams/elemres/beamforce |
| Vtu-file | test01\_1stord\_linstat\_R1\_LD\_beams\_elemres.vtu |
| Xtract: | |
| Paraview: | |

|  |  |
| --- | --- |
| Component | NXY |
| Dataset | test01\_1stord\_linstat\_R1/LD\_beams/elemres/beamforce |
| Vtu-file | test01\_1stord\_linstat\_R1\_LD\_beams\_elemres.vtu |
| Xtract: | |
| Paraview: | |

|  |  |
| --- | --- |
| Component | NXZ |
| Dataset | test01\_1stord\_linstat\_R1/LD\_beams/elemres/beamforce |
| Vtu-file | test01\_1stord\_linstat\_R1\_LD\_beams\_elemres.vtu |
| Xtract: | |
| Paraview: | |

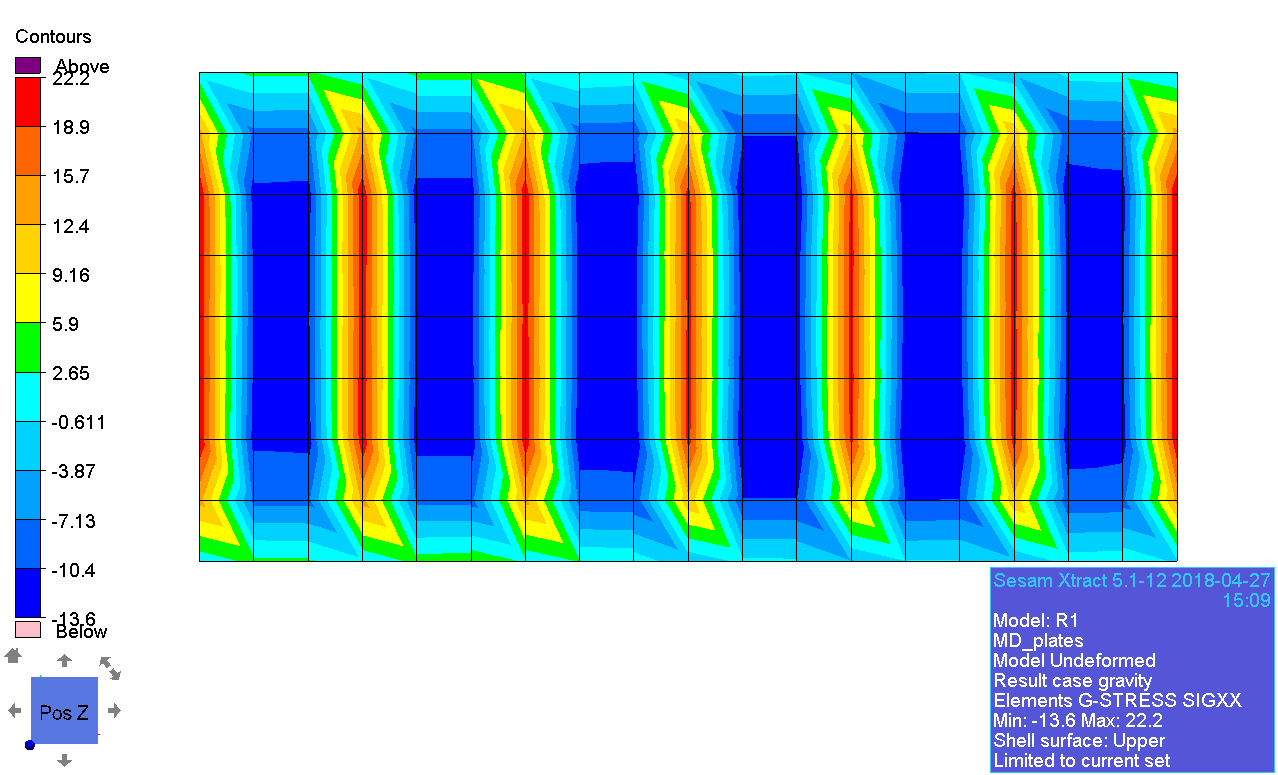
|  |  |
| --- | --- |
| Component | MXX |
| Dataset | test01\_1stord\_linstat\_R1/LD\_beams/elemres/beamforce |
| Vtu-file | test01\_1stord\_linstat\_R1\_LD\_beams\_elemres.vtu |
| Xtract: | |
| Paraview: | |

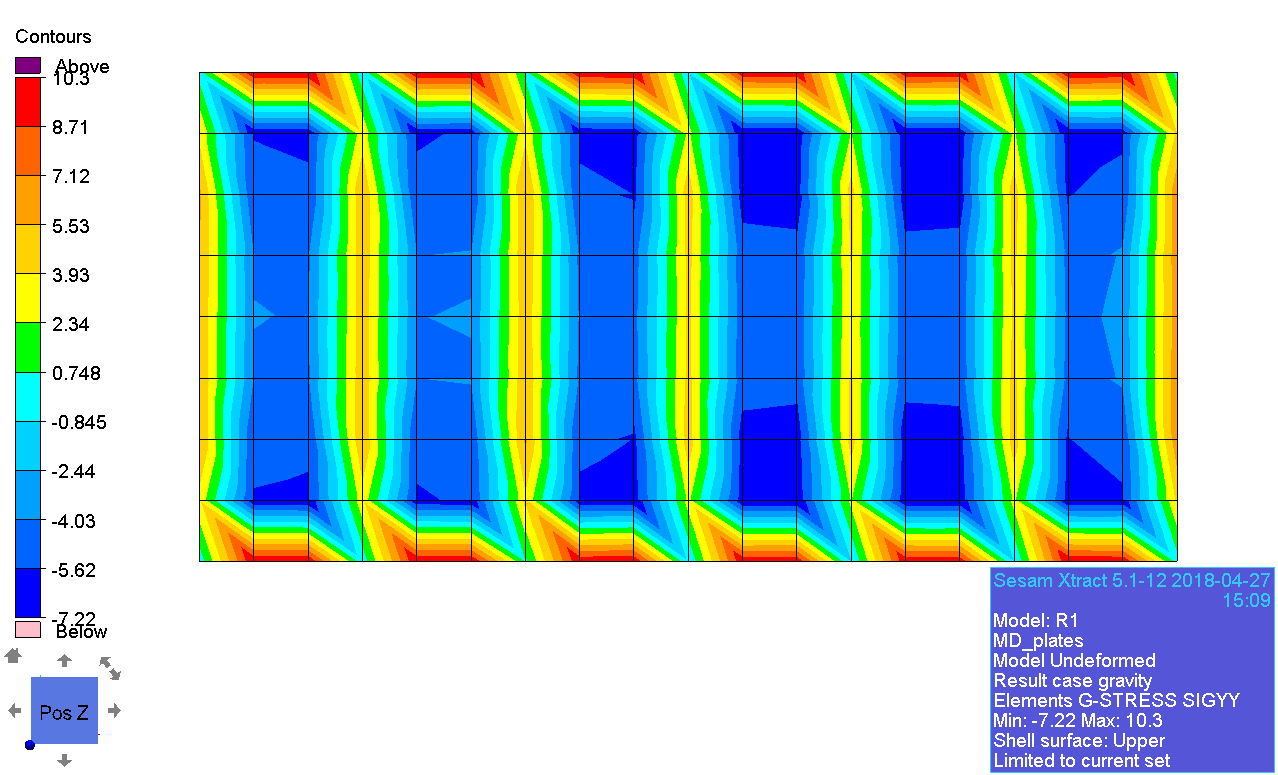
|  |  |
| --- | --- |
| Component | MXY |
| Dataset | test01\_1stord\_linstat\_R1/LD\_beams/elemres/beamforce |
| Vtu-file | test01\_1stord\_linstat\_R1\_LD\_beams\_elemres.vtu |
| Xtract: | |
| Paraview: | |

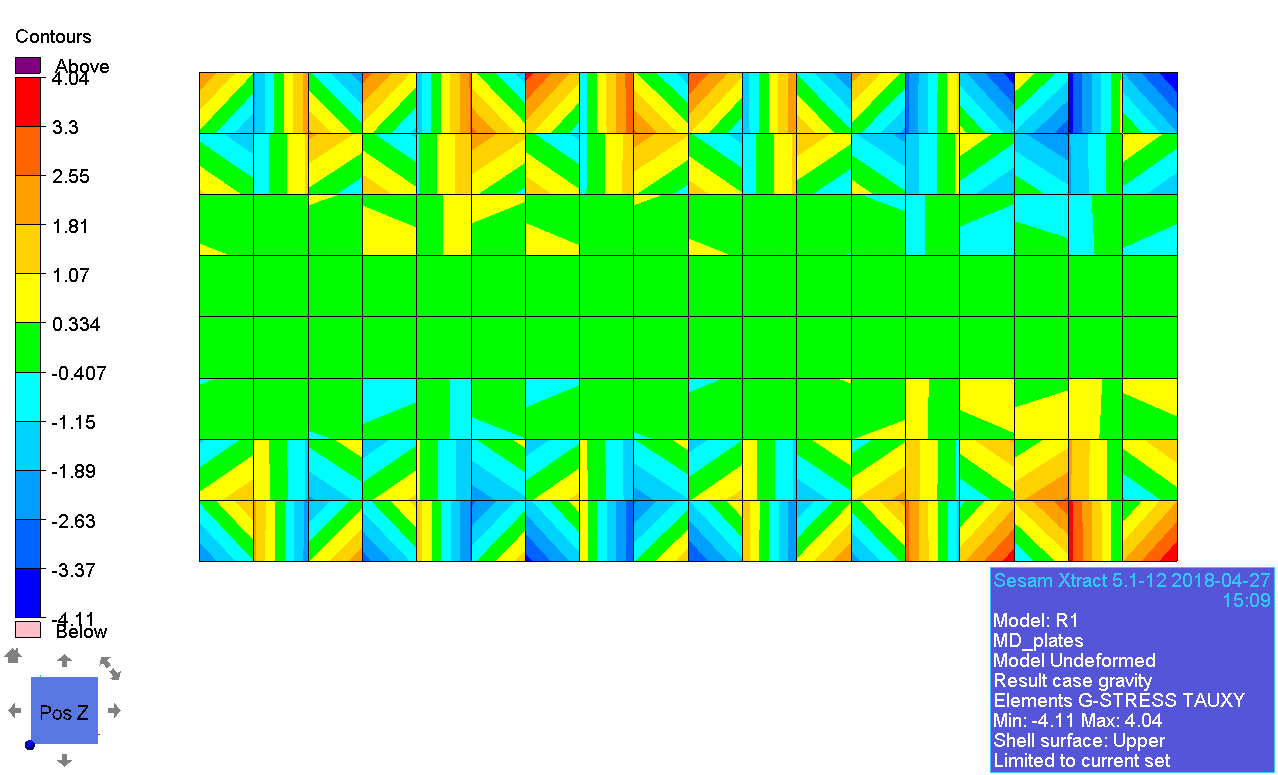
|  |  |
| --- | --- |
| Component | MXZ |
| Dataset | test01\_1stord\_linstat\_R1/LD\_beams/elemres/beamforce |
| Vtu-file | test01\_1stord\_linstat\_R1\_LD\_beams\_elemres.vtu |
| Xtract: | |
| Paraview: | |

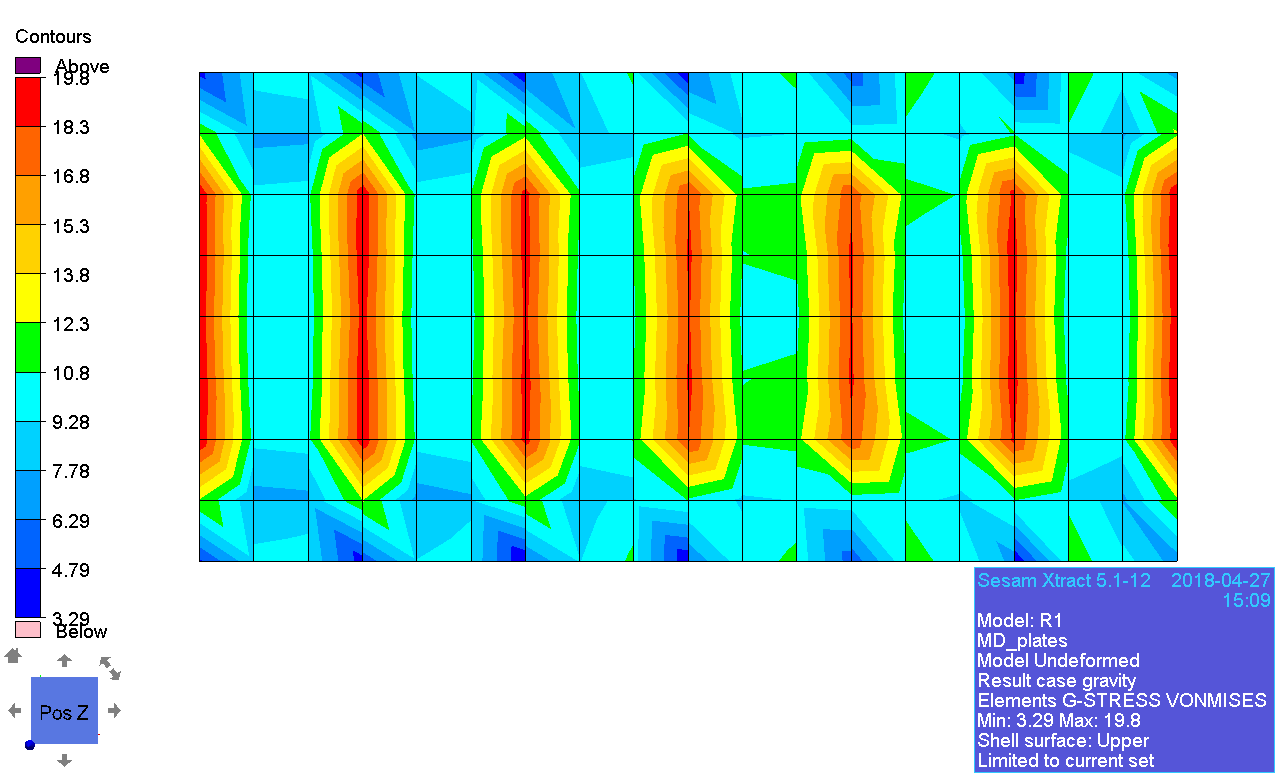
## MD (quad elements)

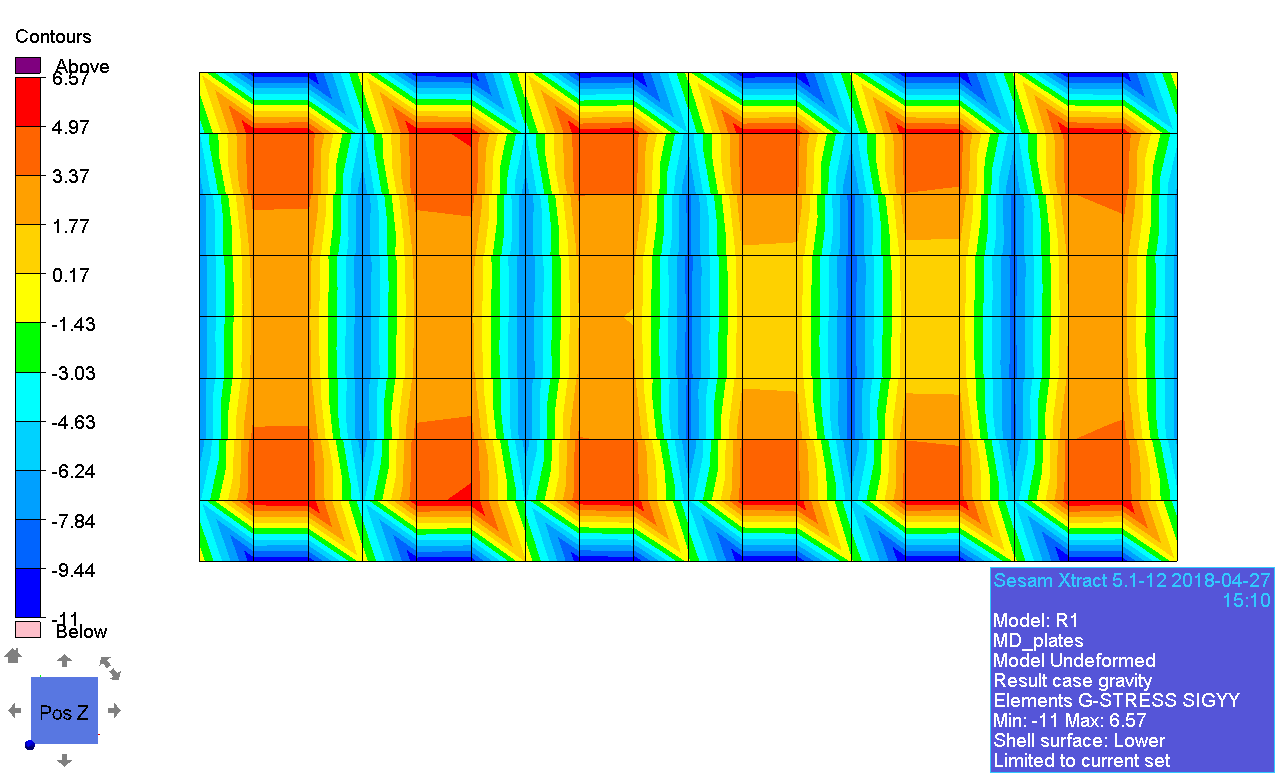
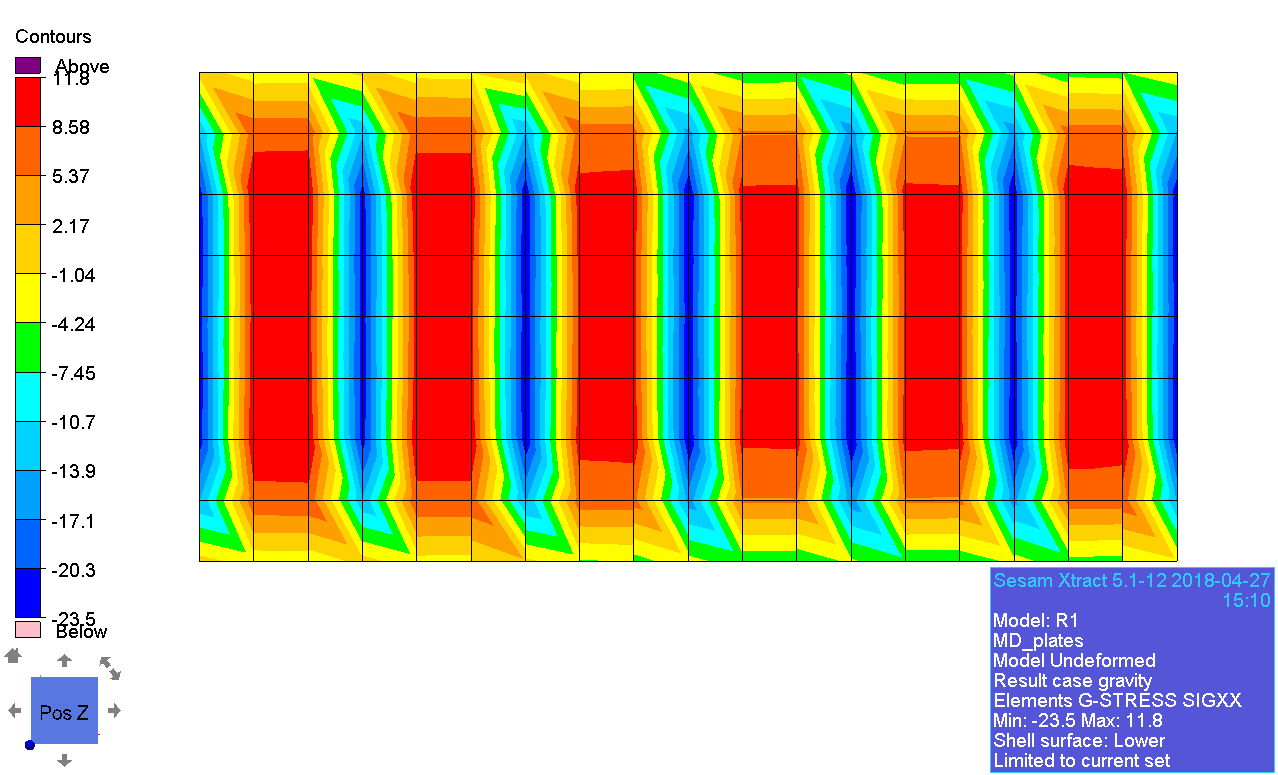
### General stress

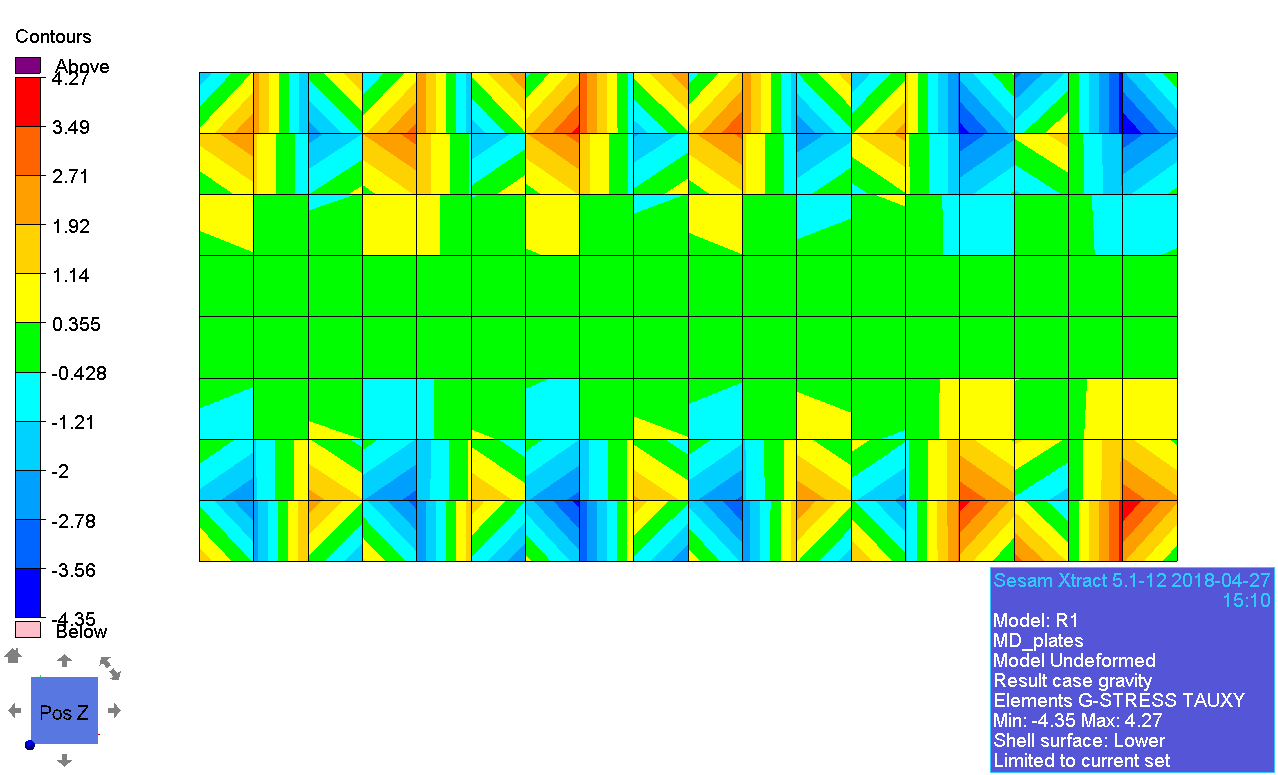


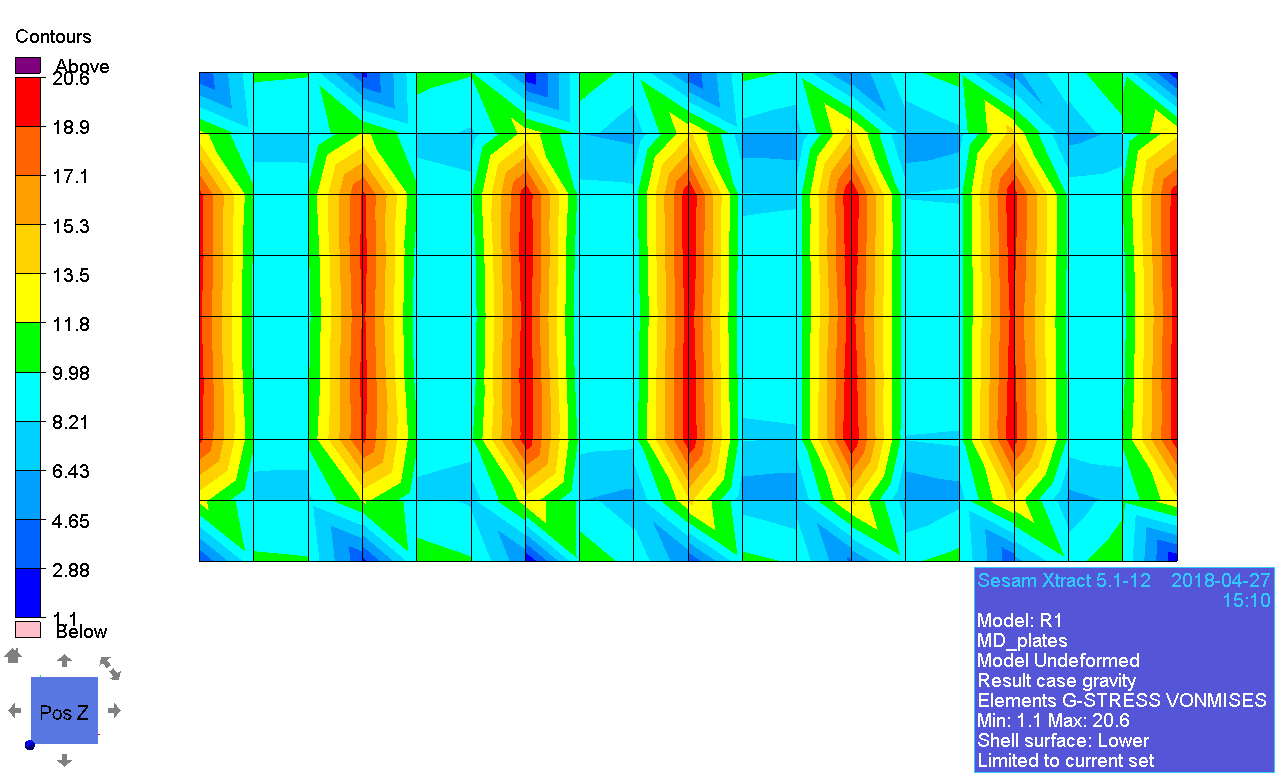




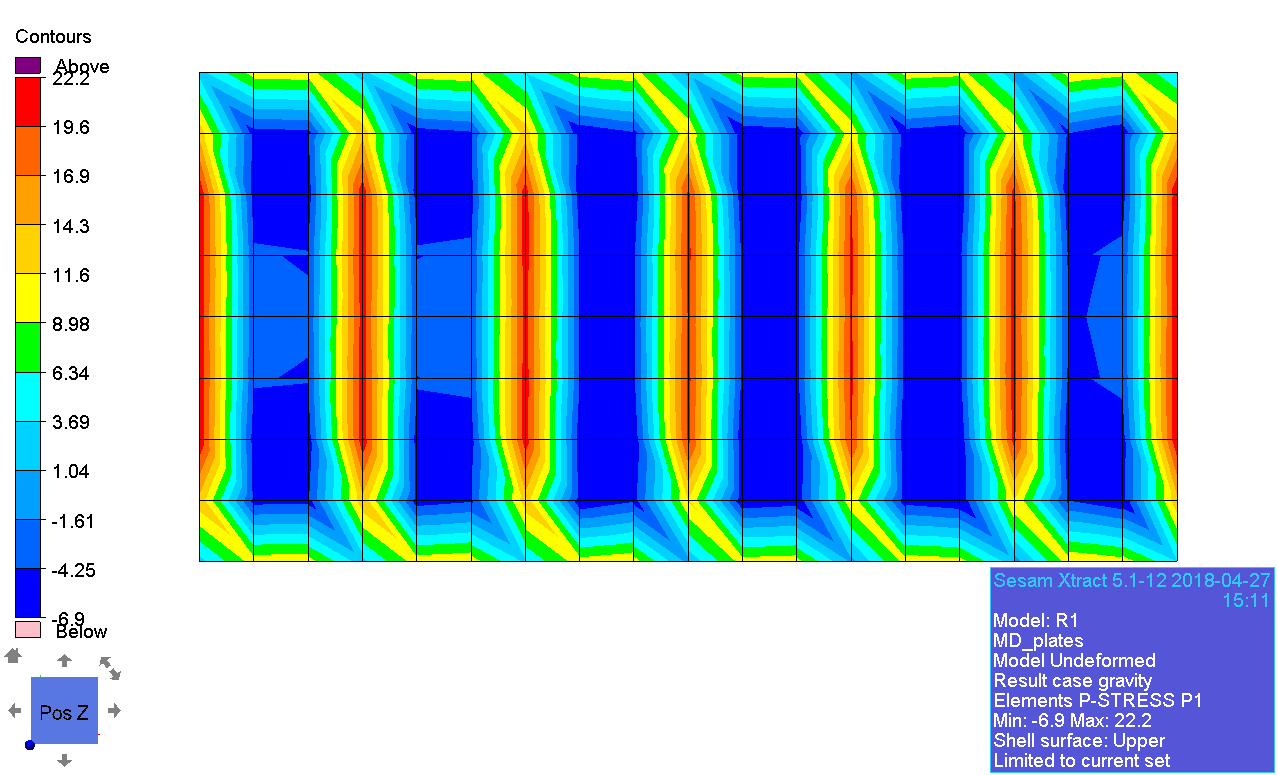


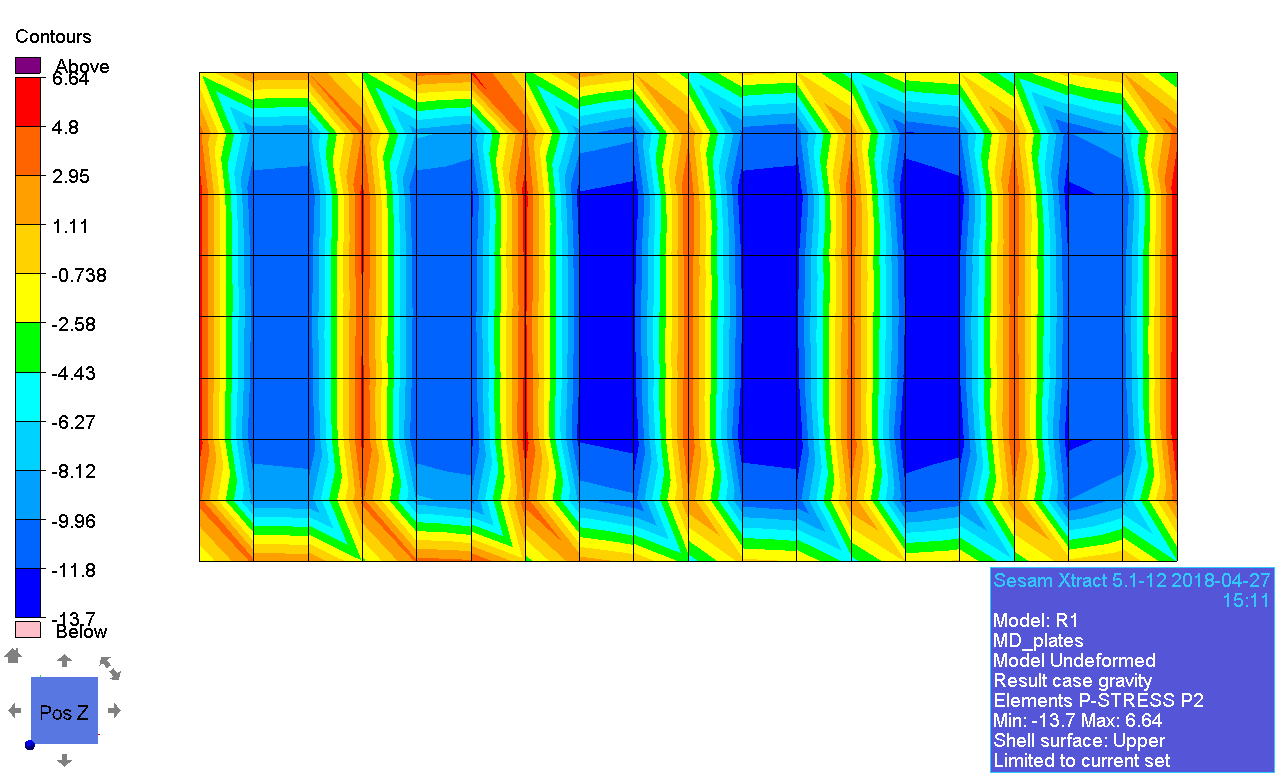


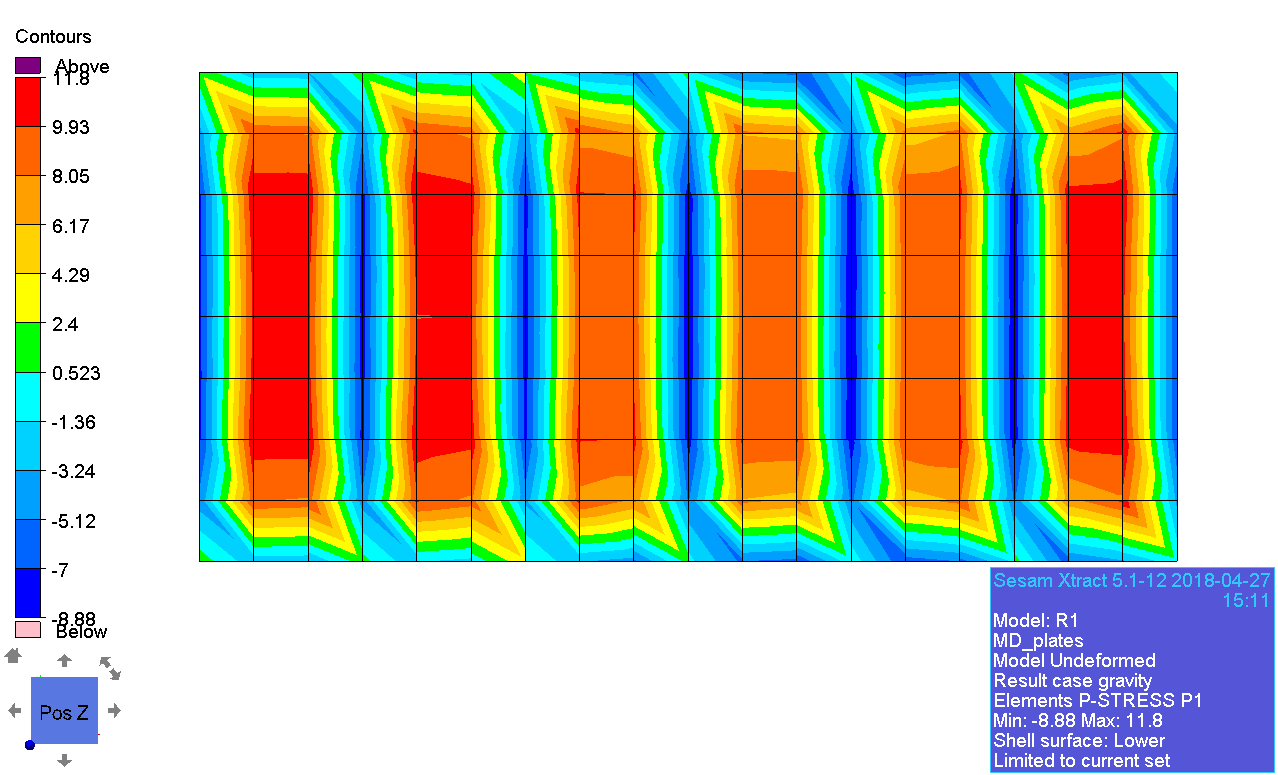


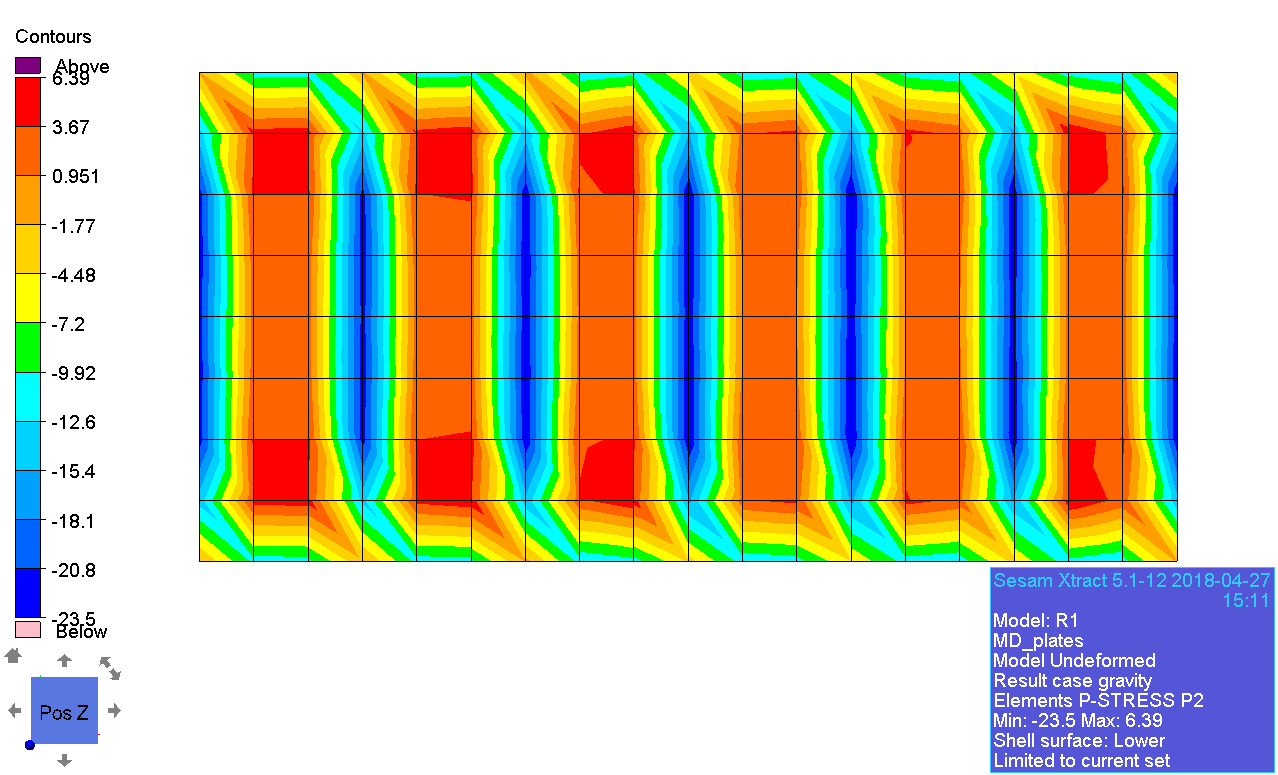


### Principal stress

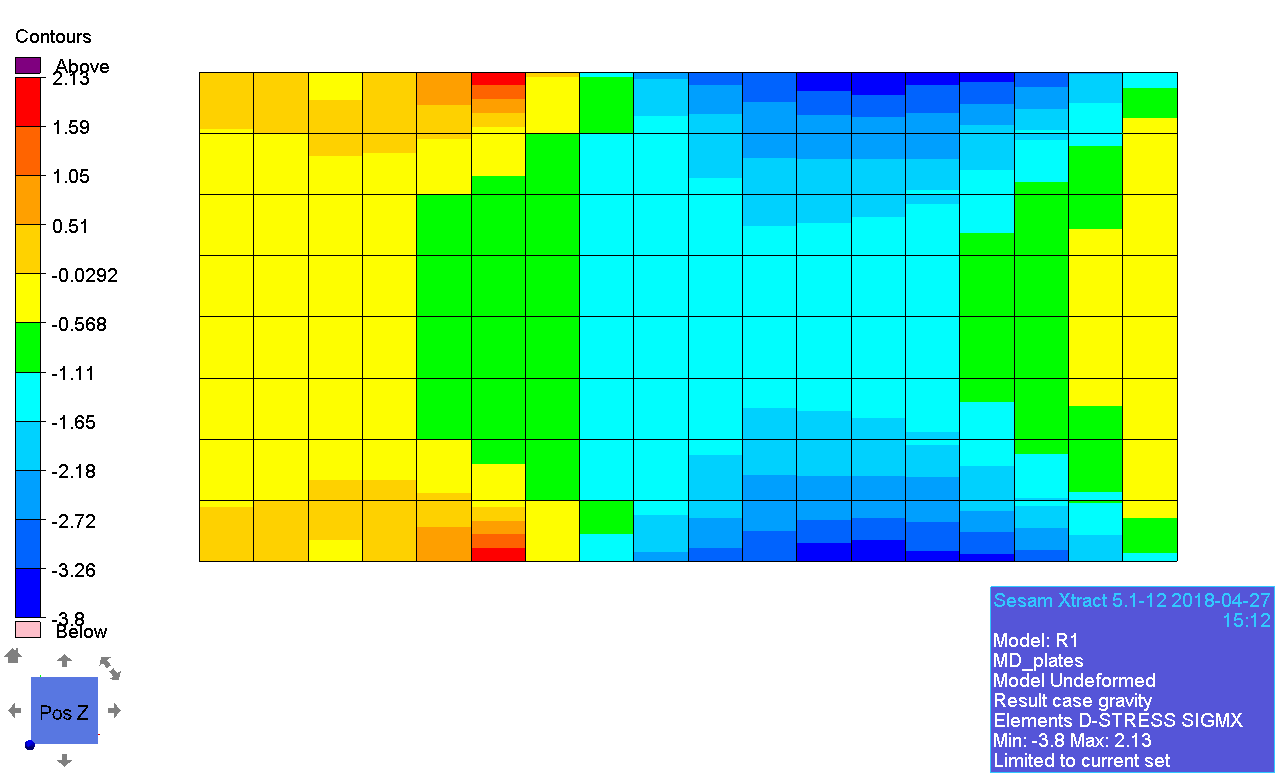




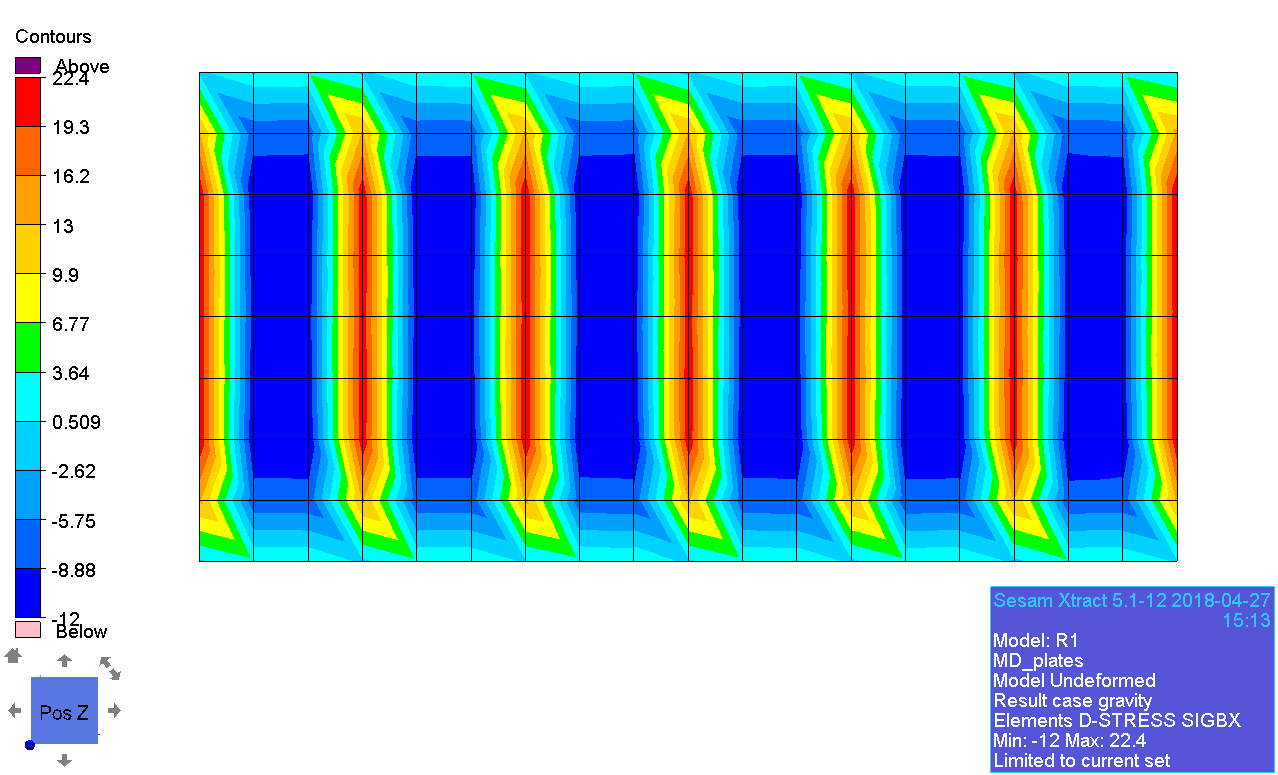


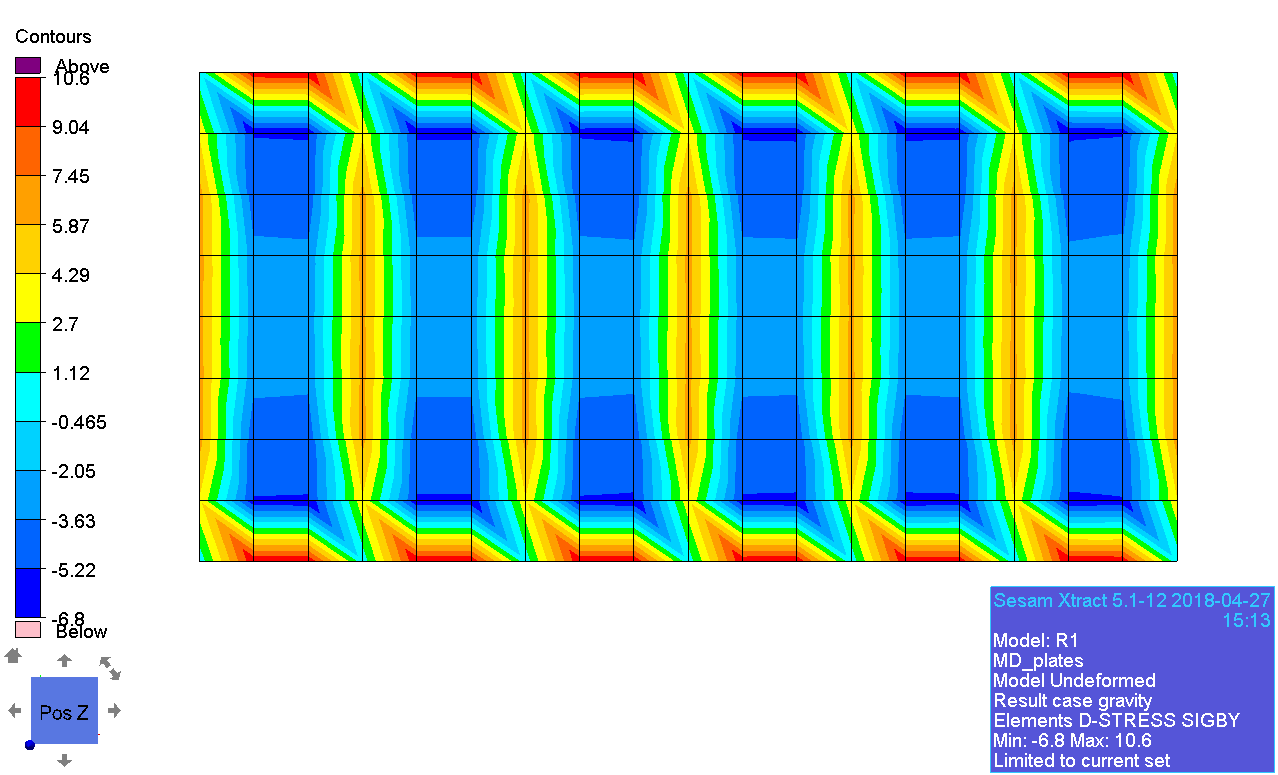


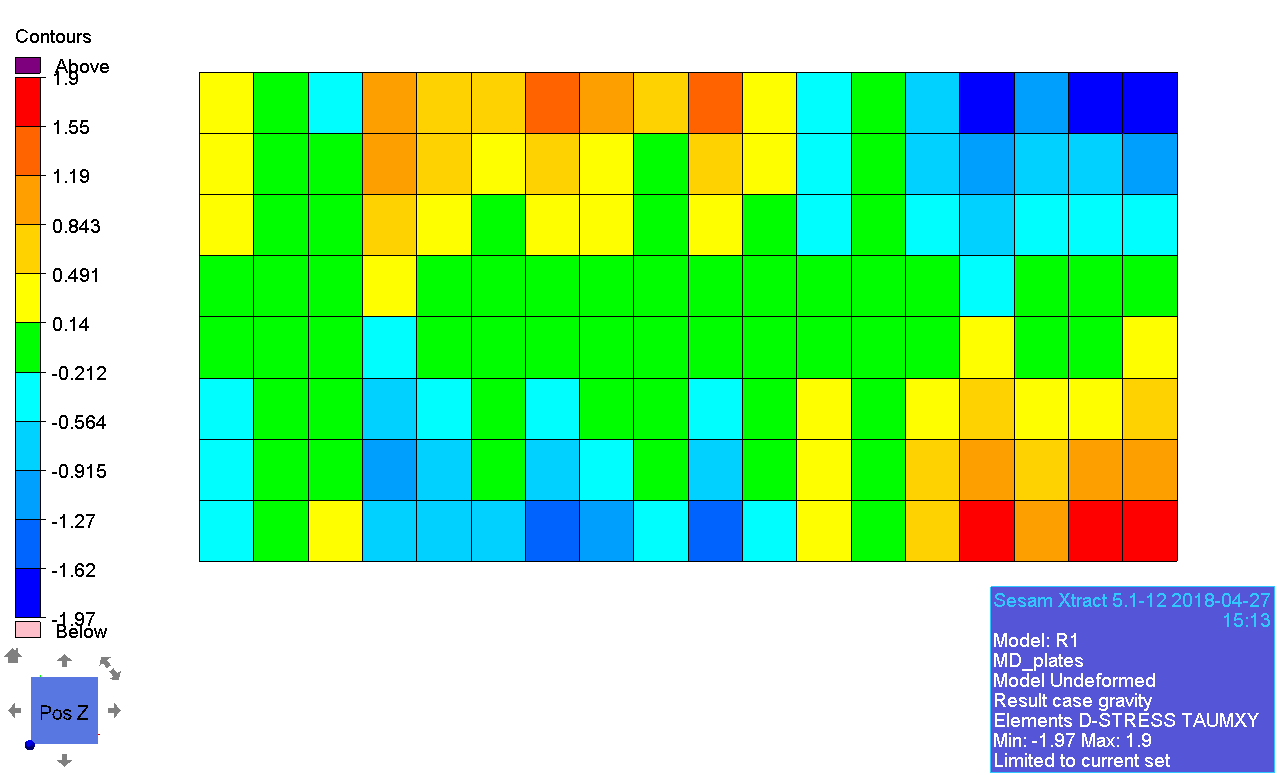
### Deccomposed stress

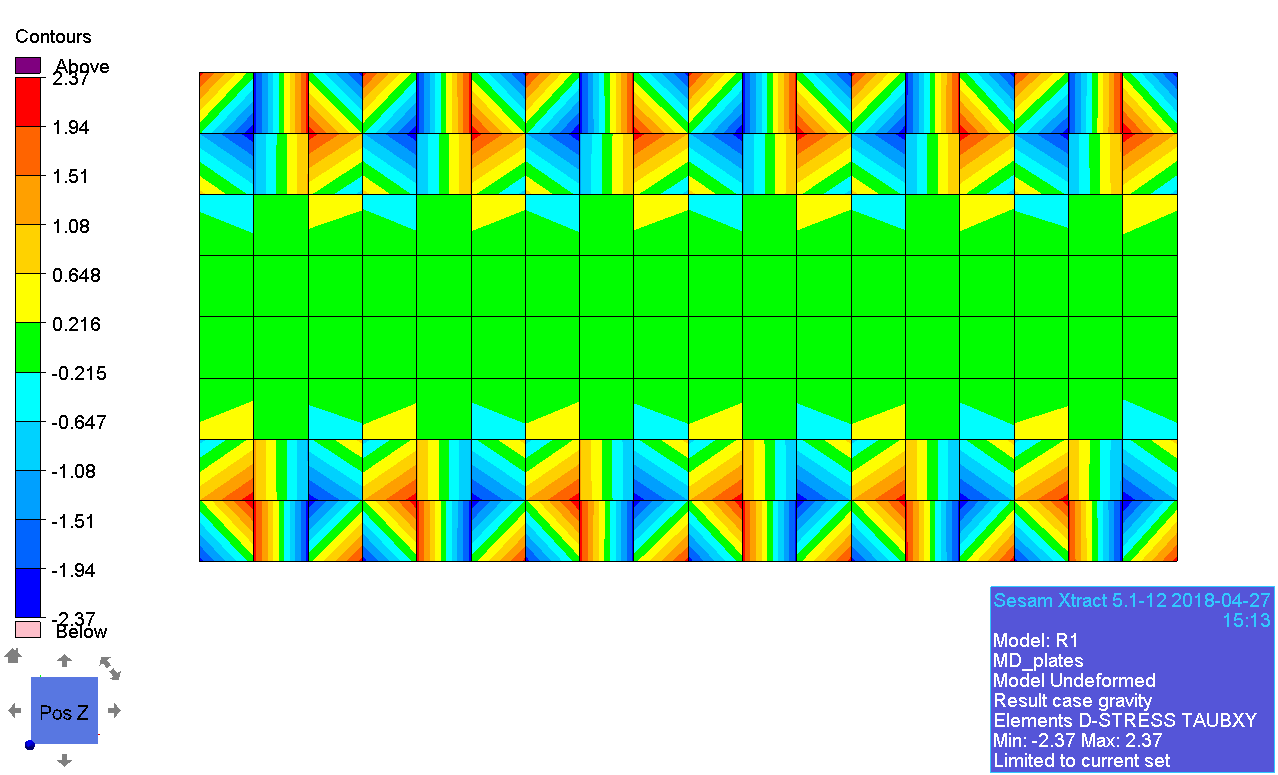


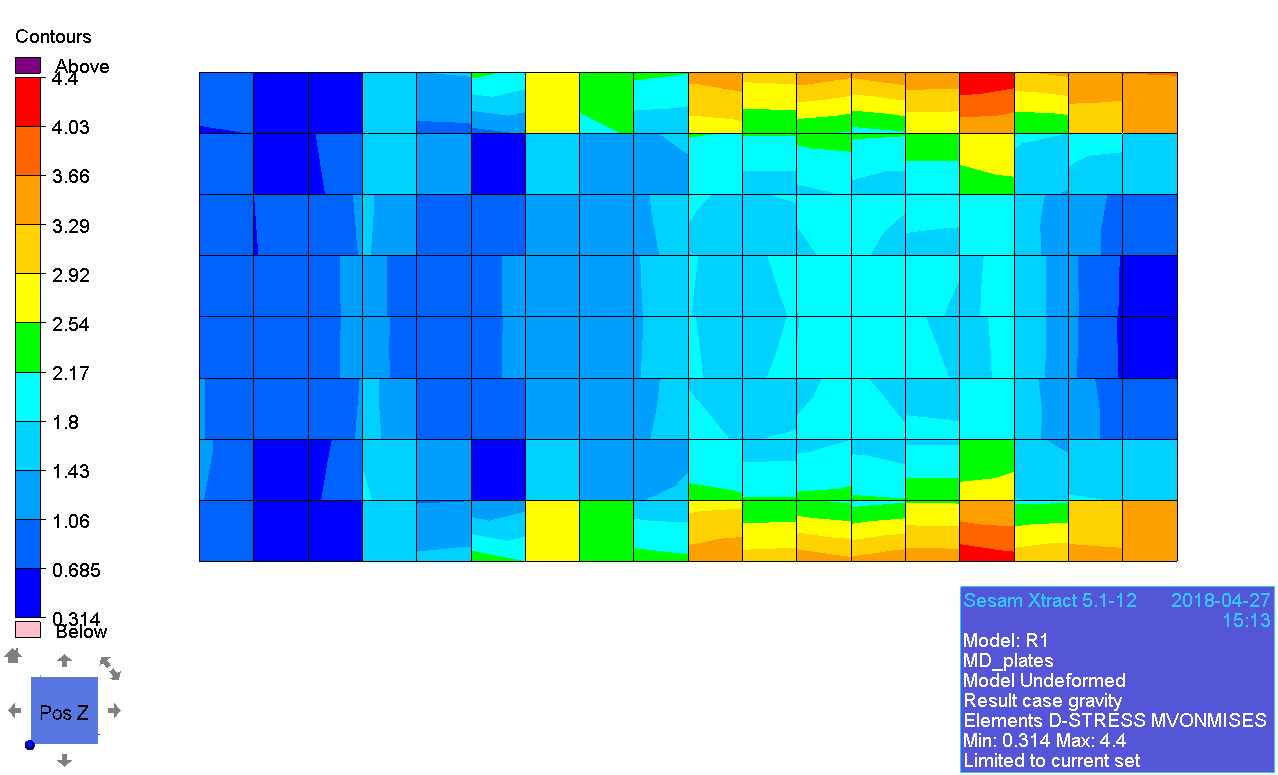




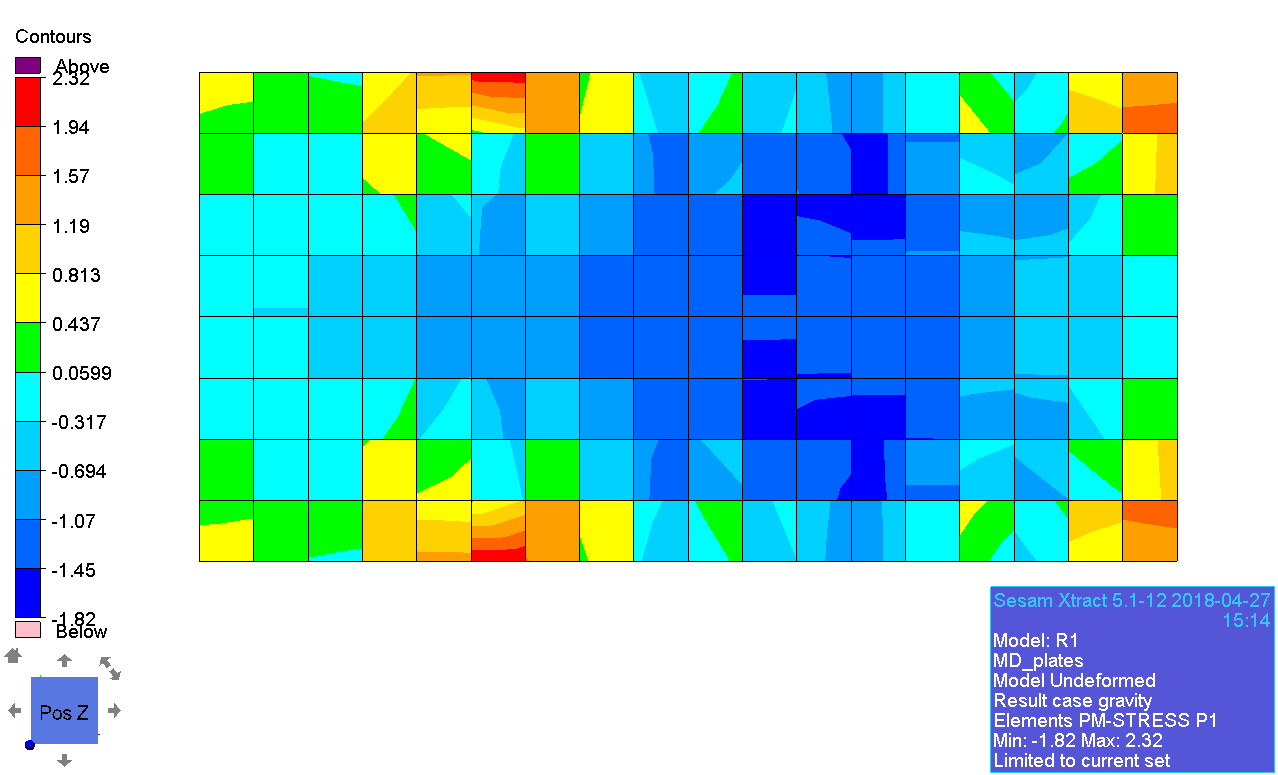


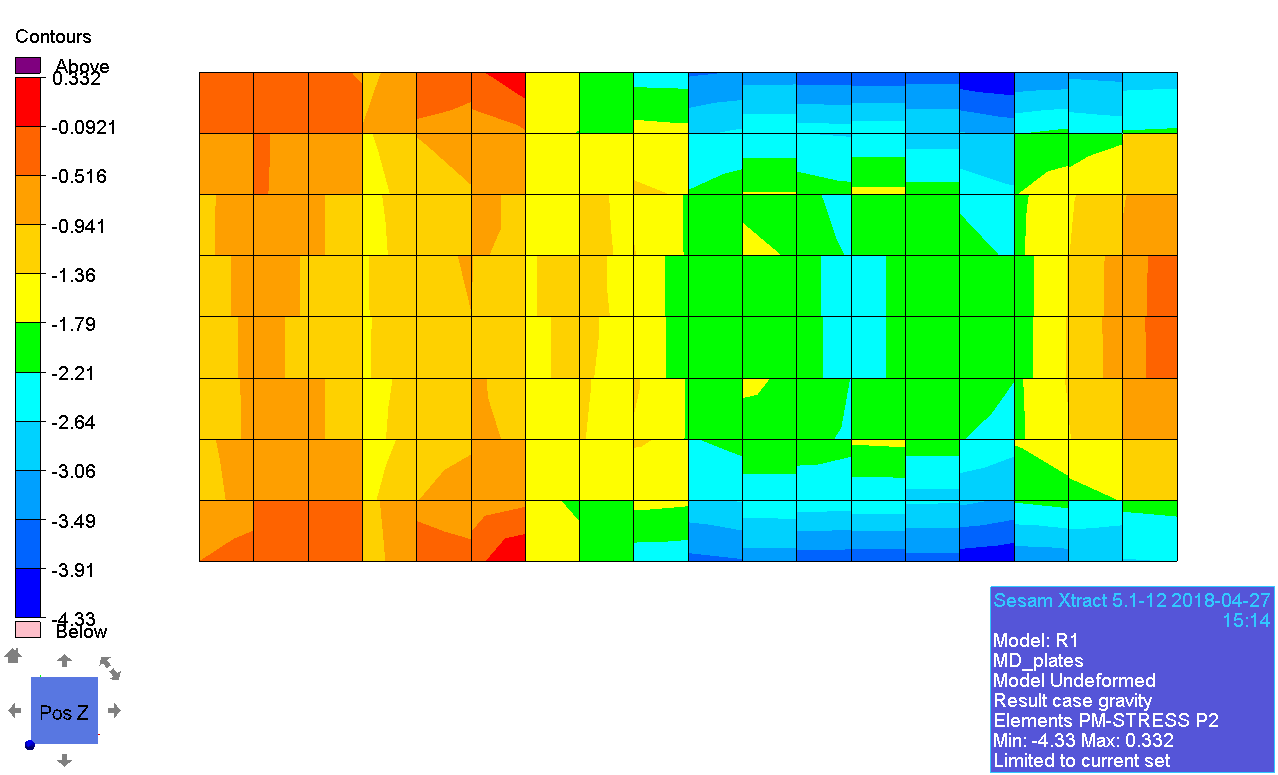




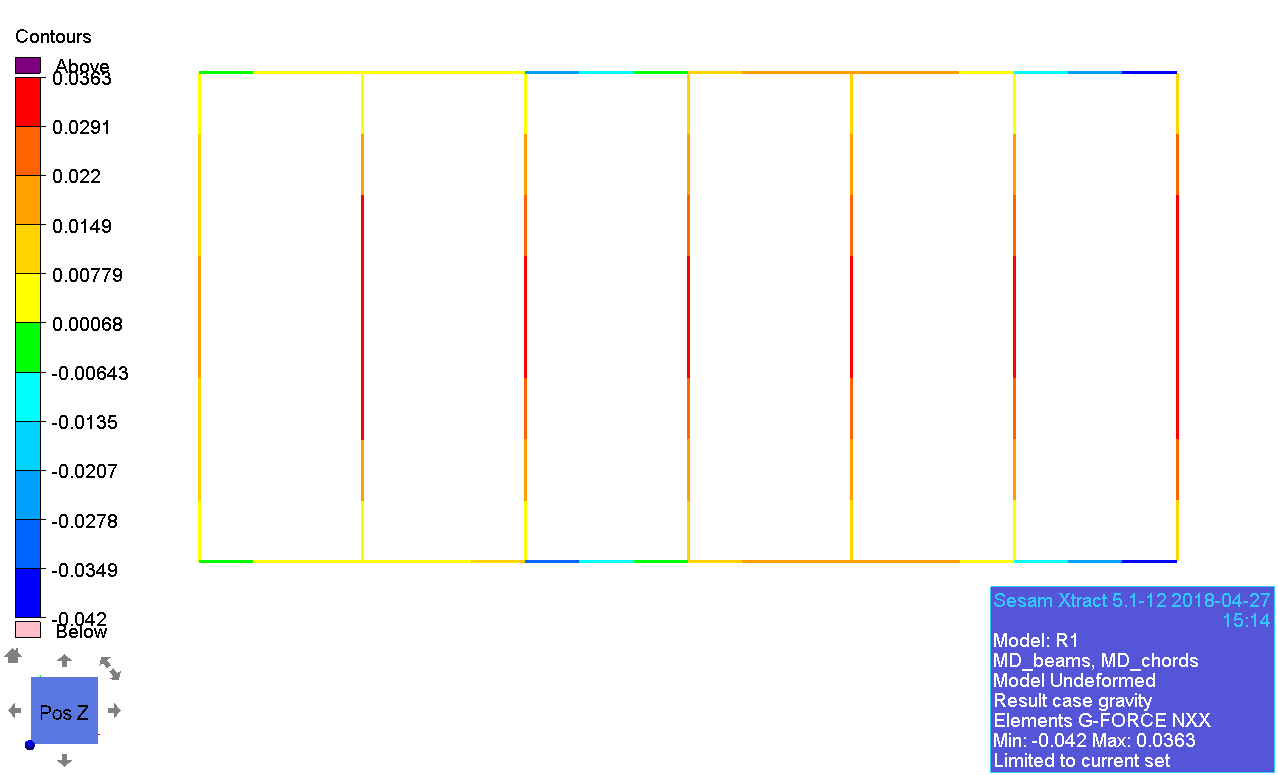
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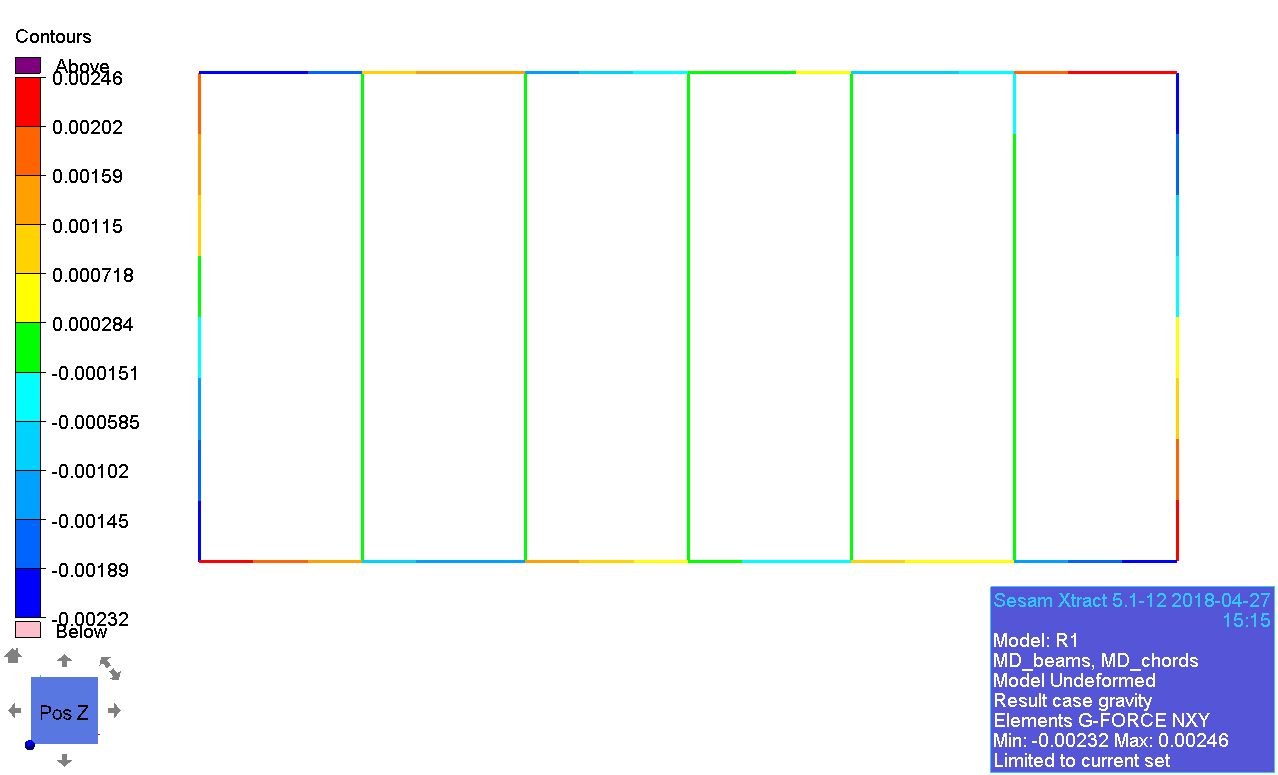
### Membrane principal stress

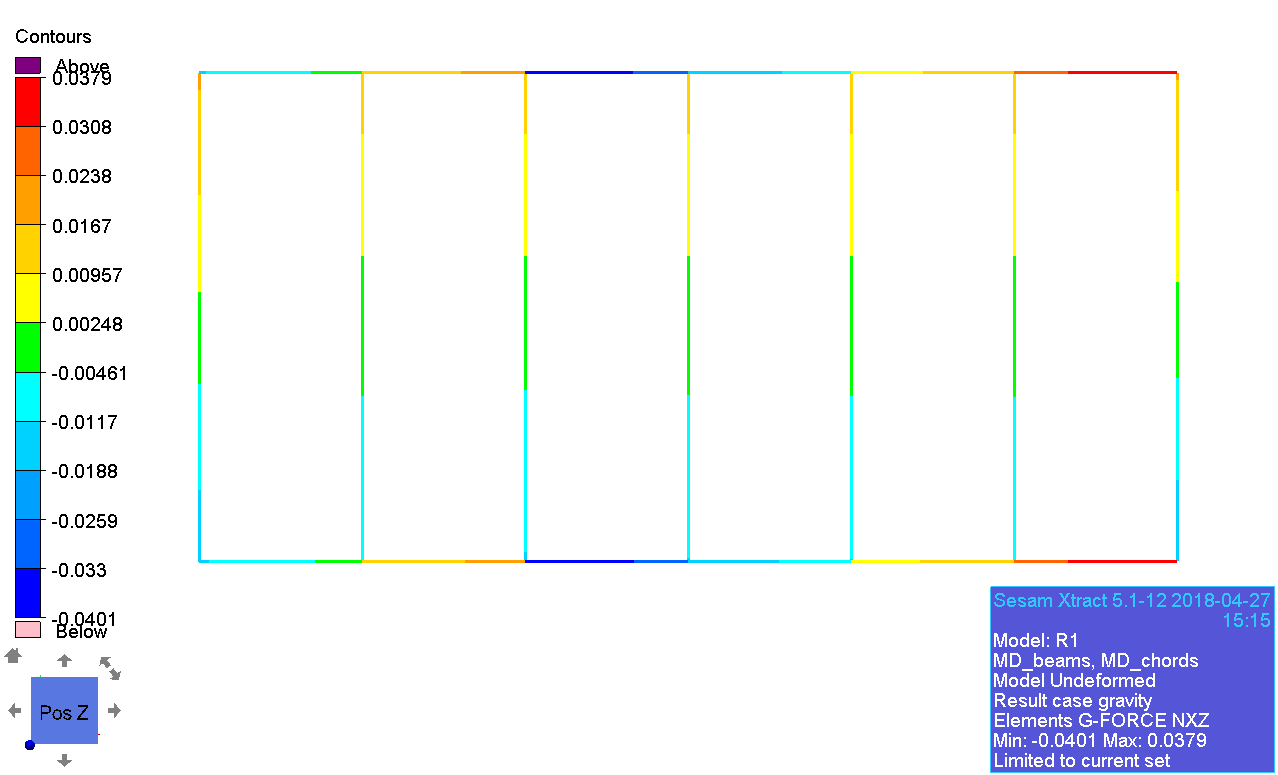


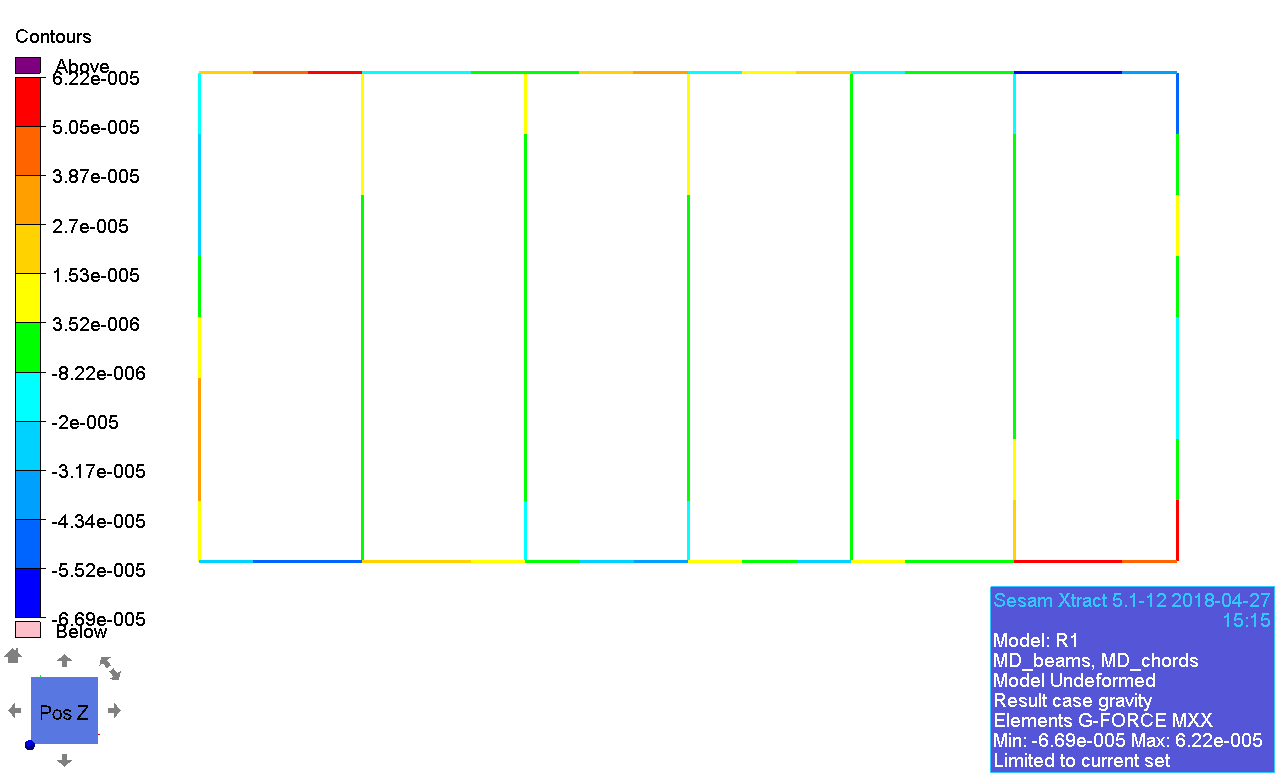


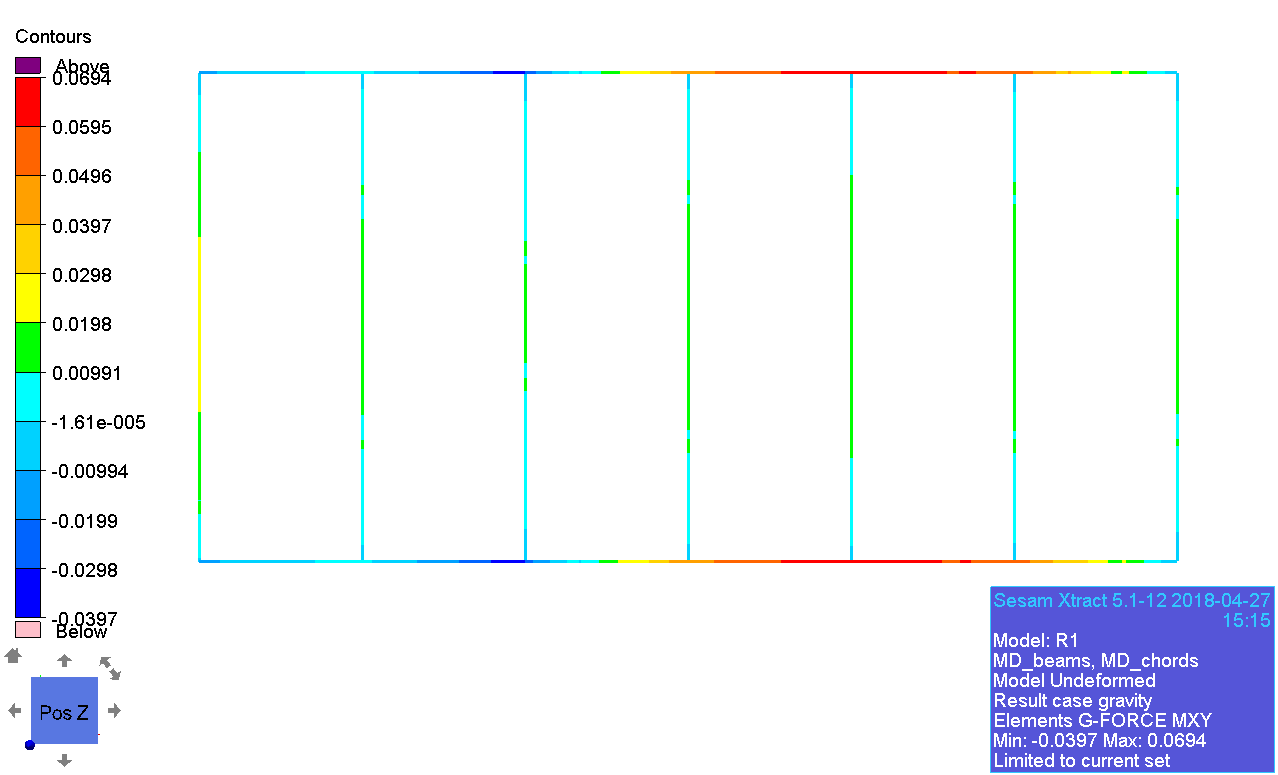
### Beam forces

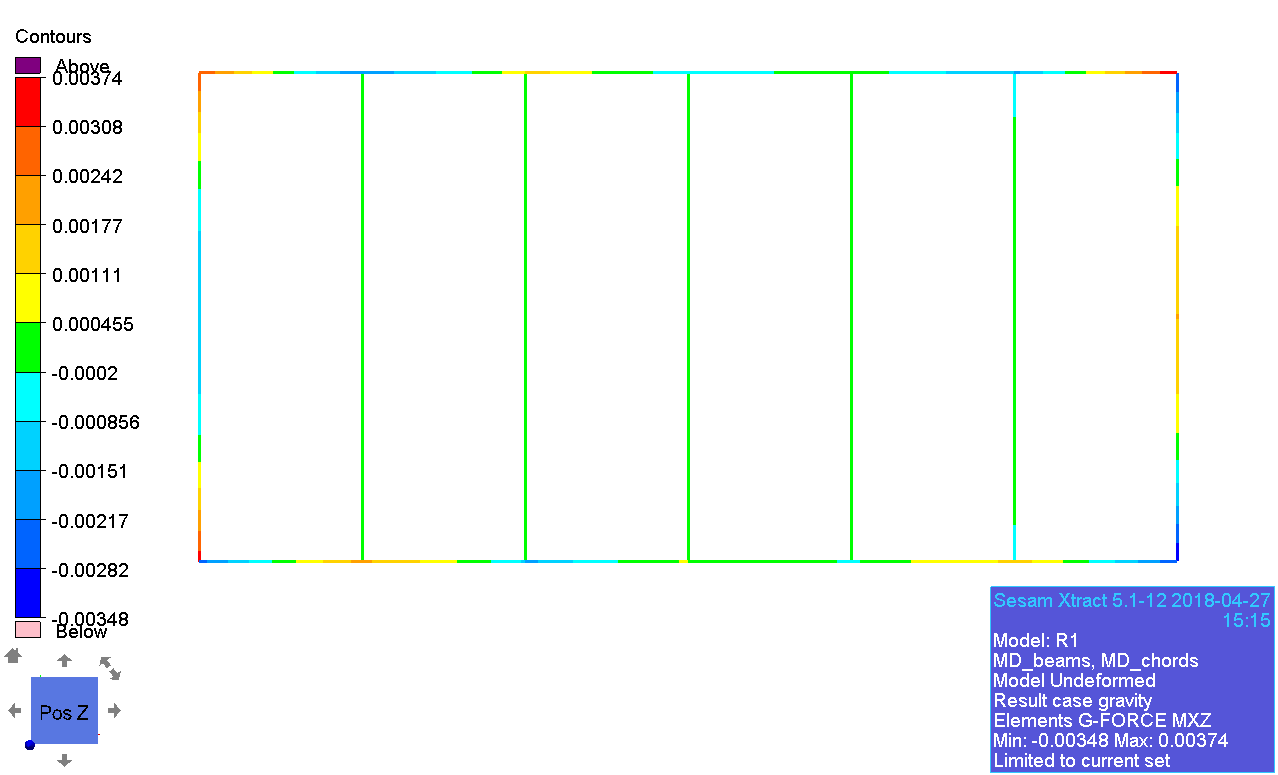




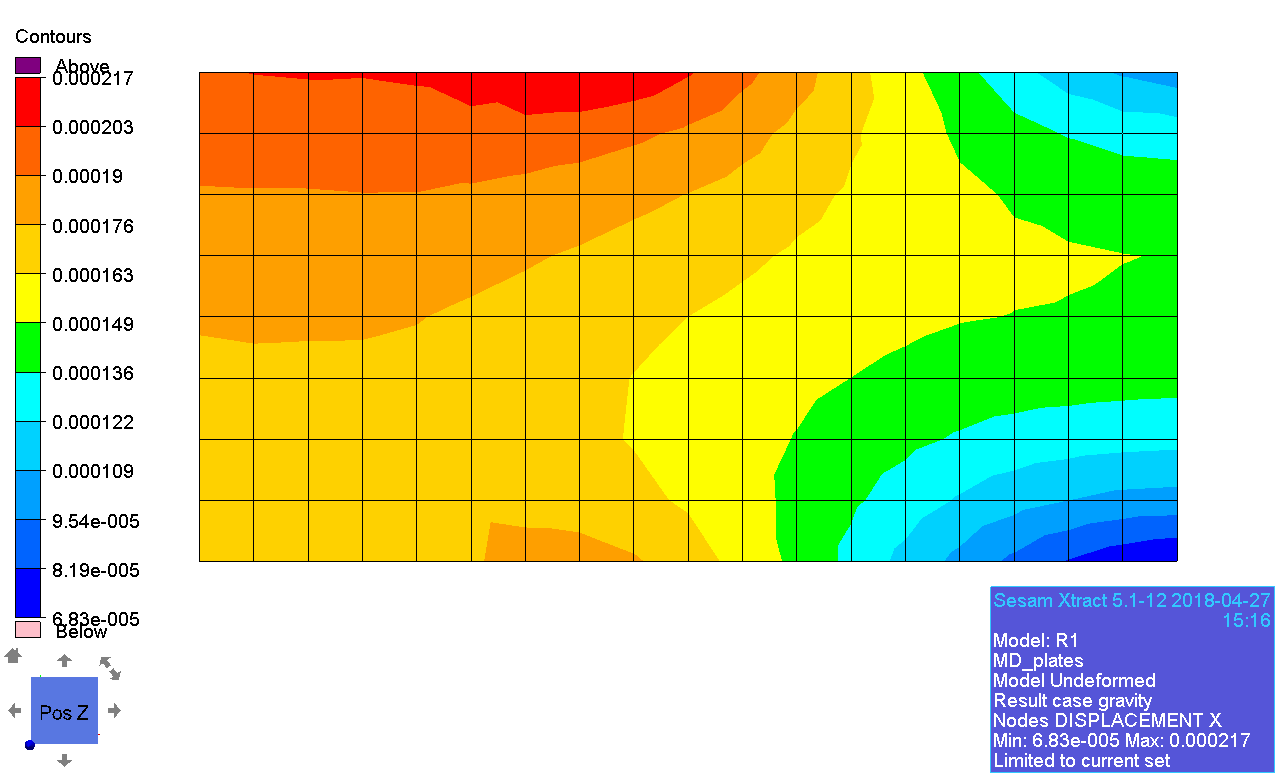


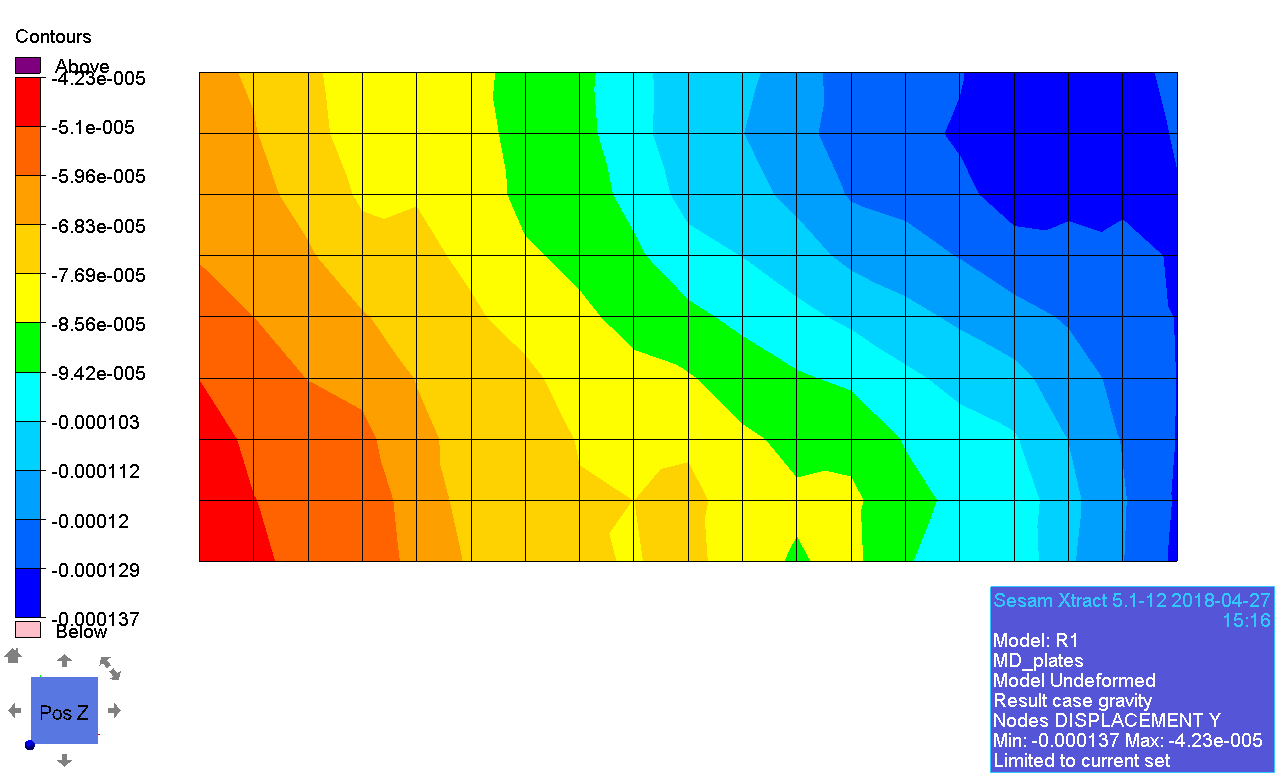


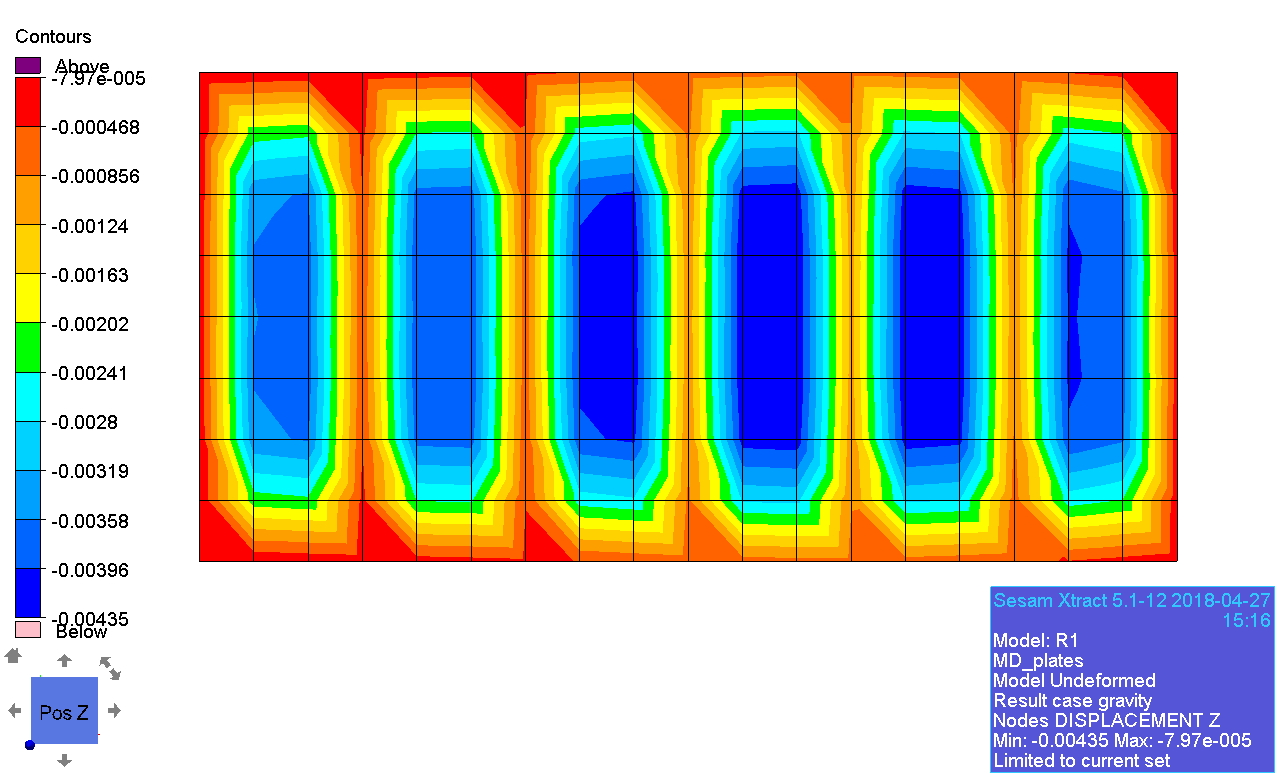


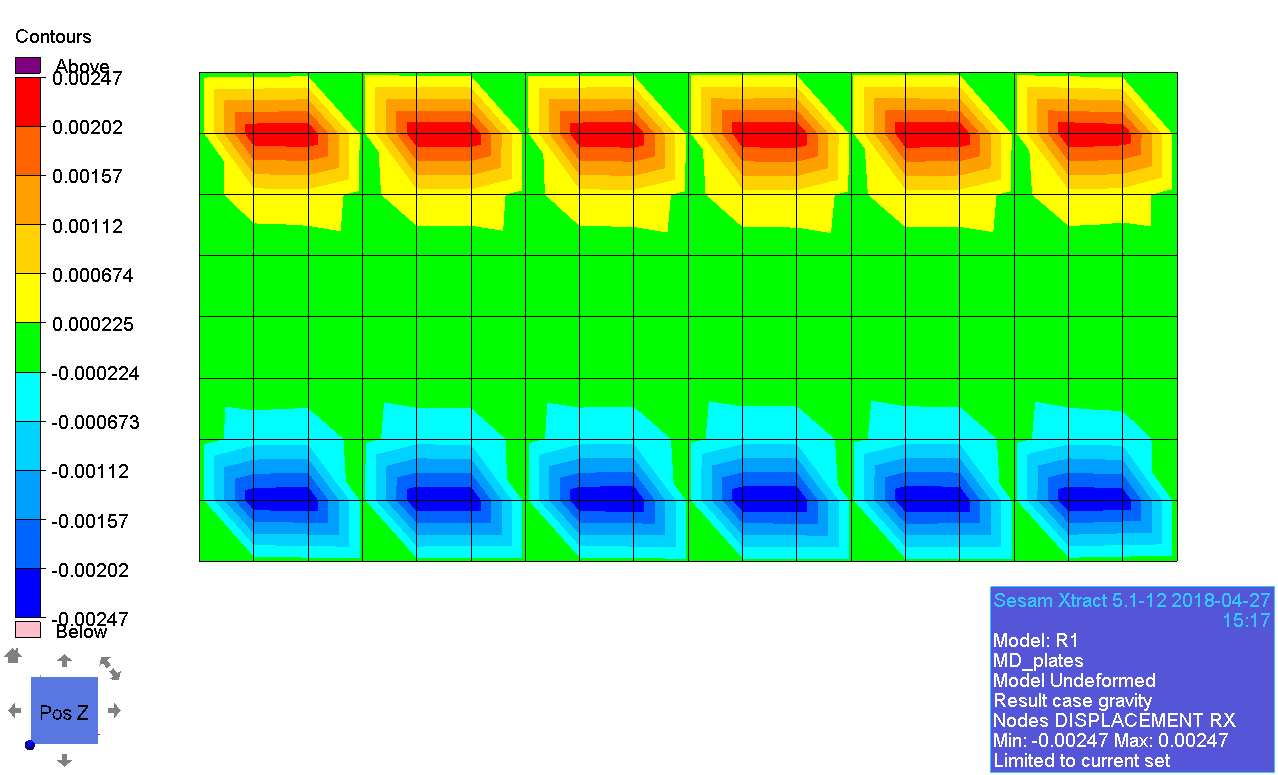


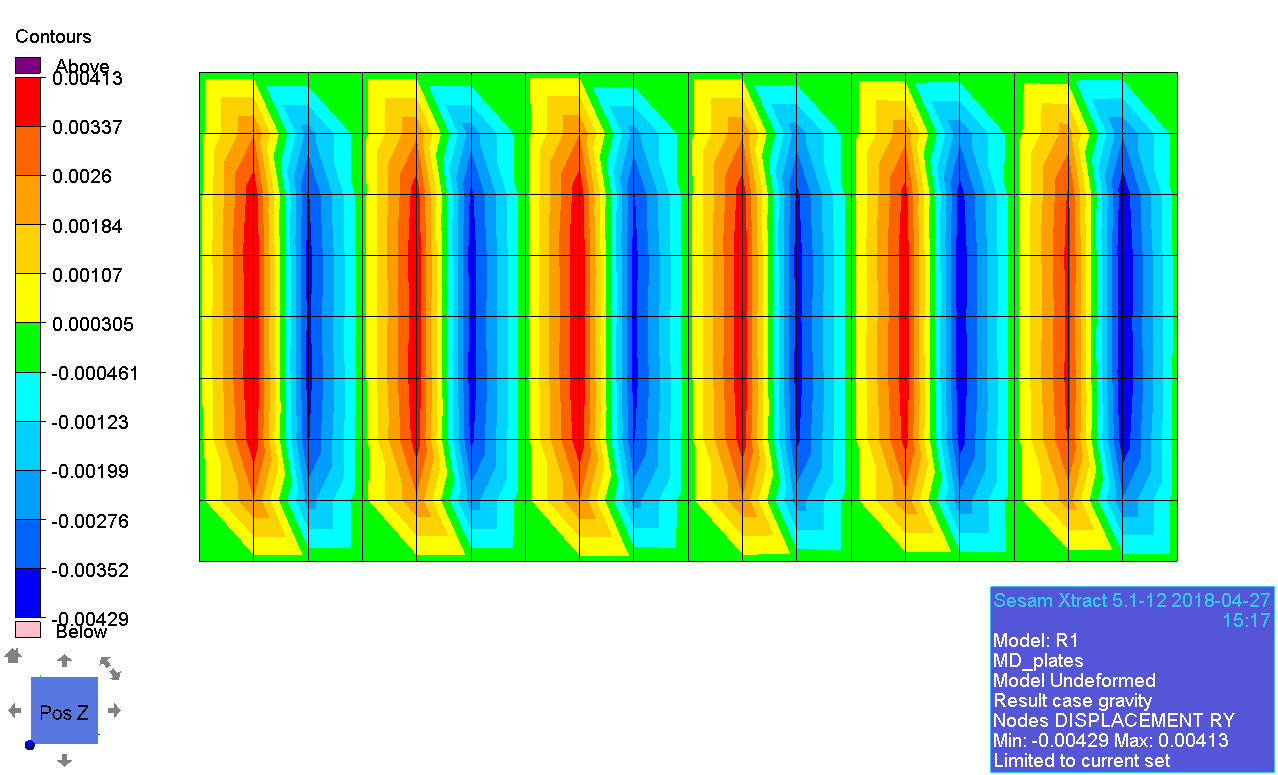
### Displacement

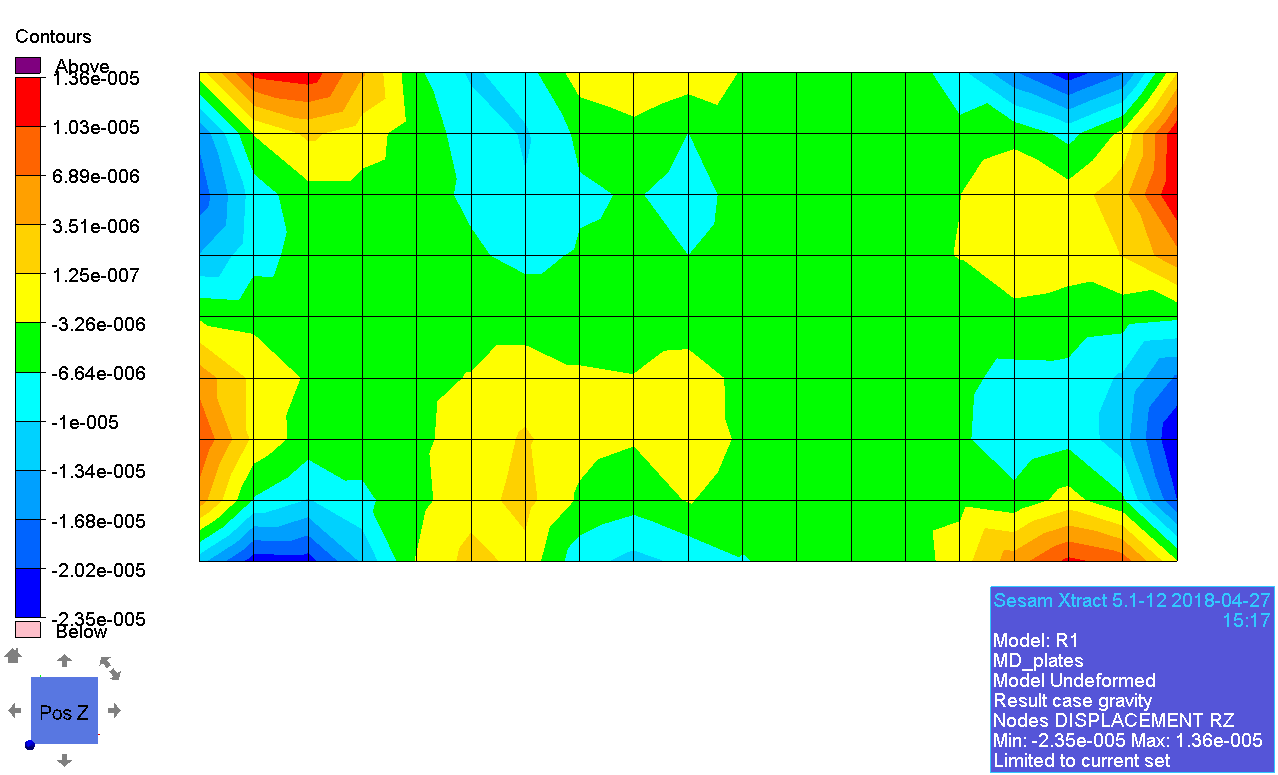








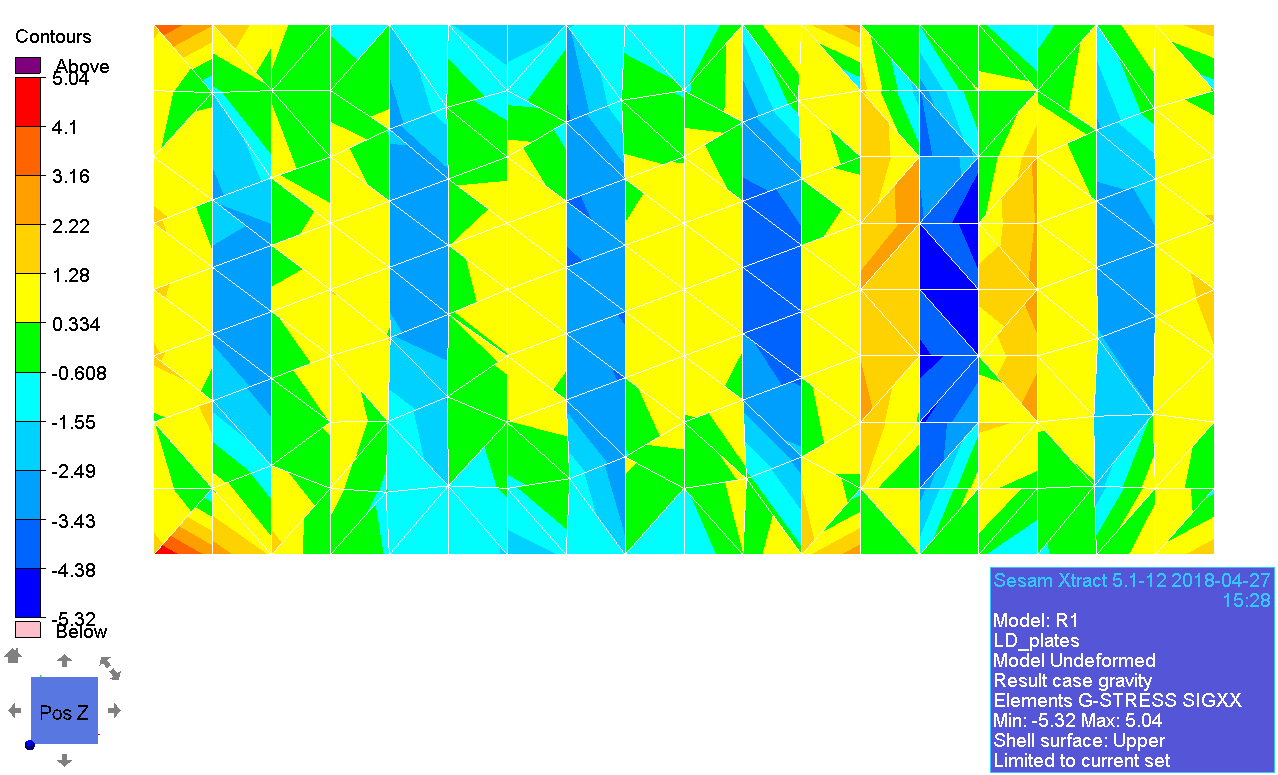


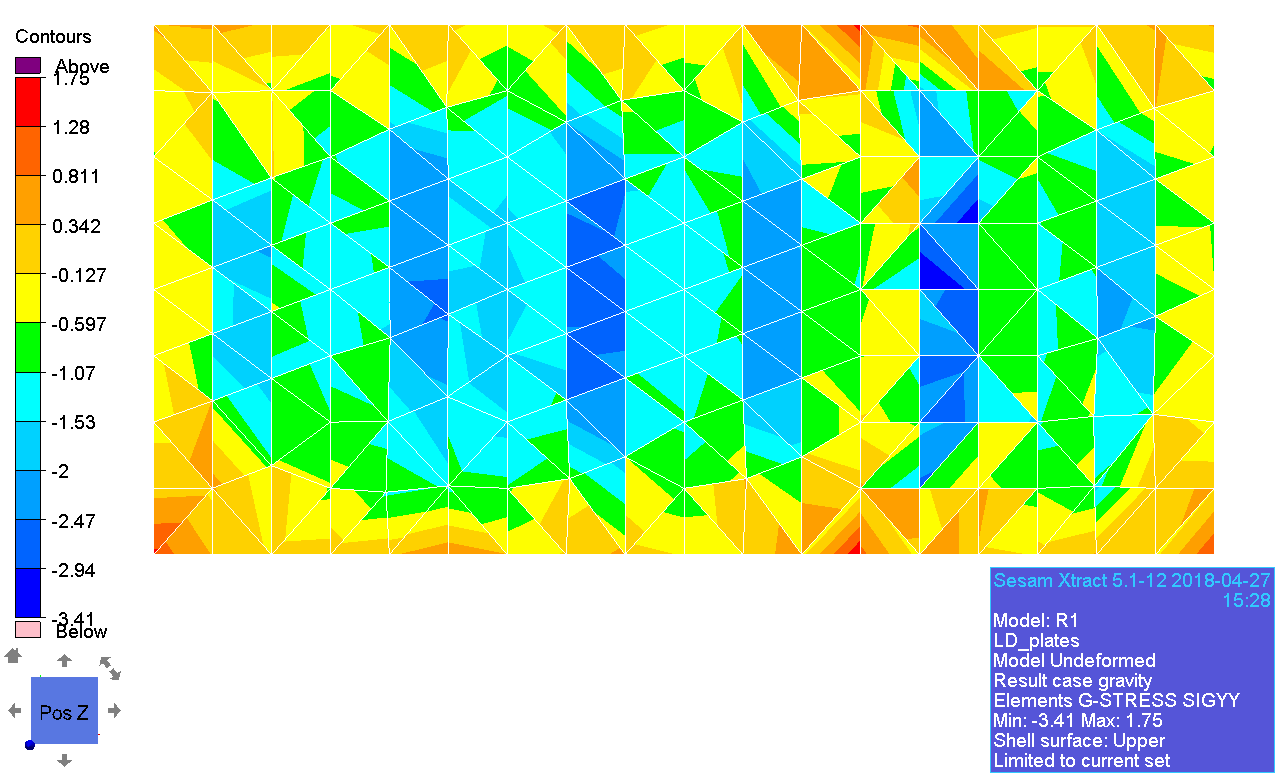


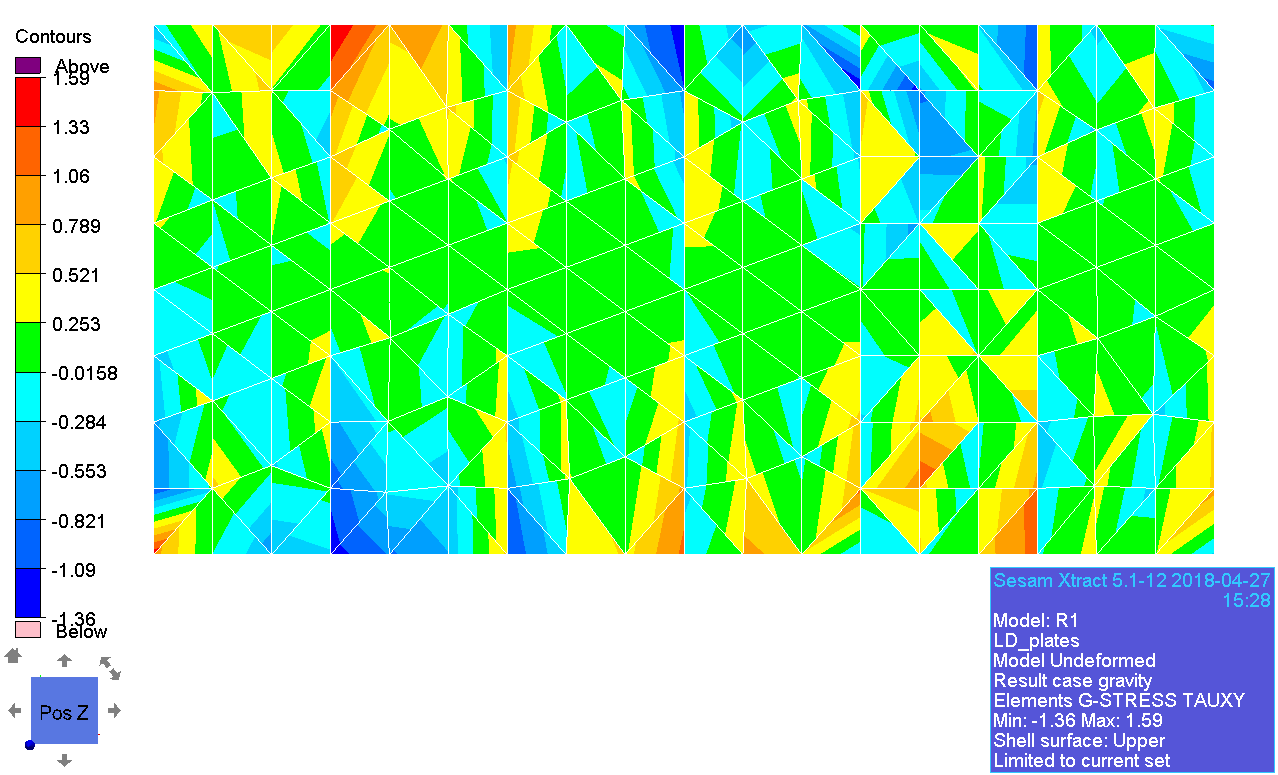
# test01\_2ndord\_linstat\_R1

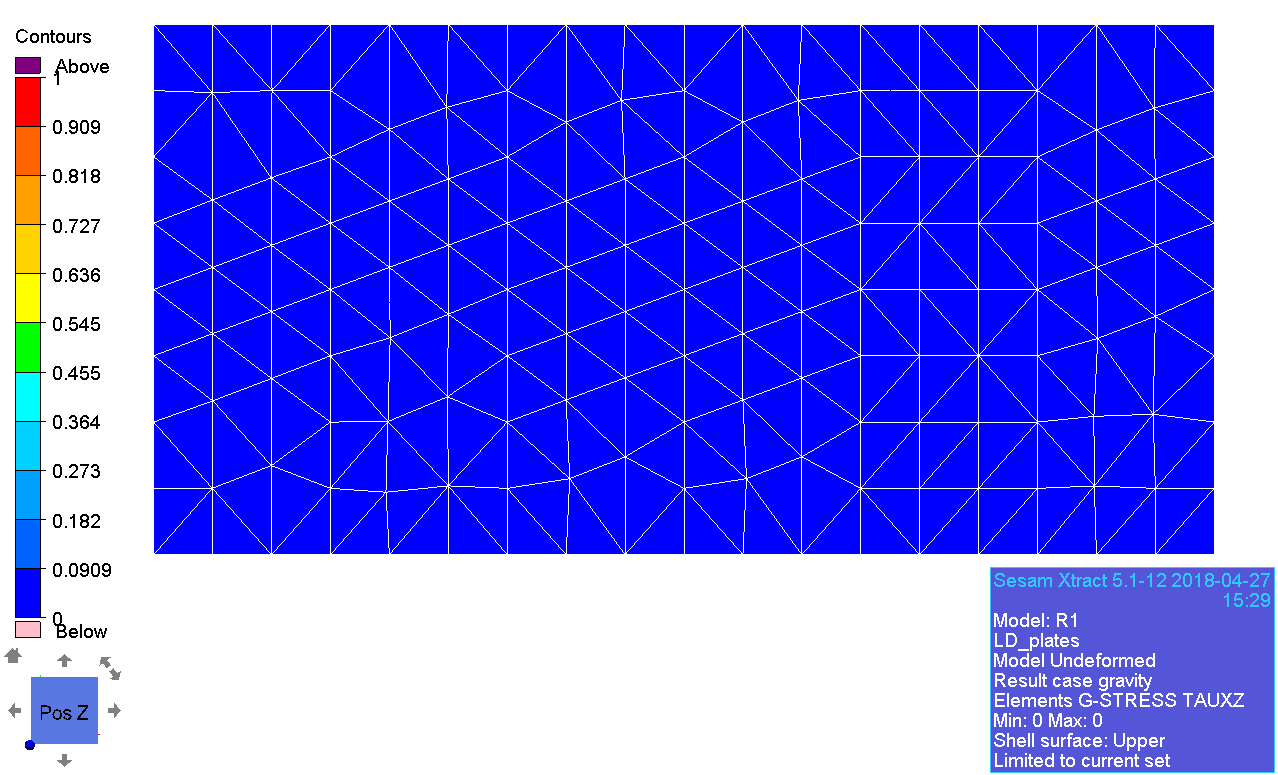
## LD

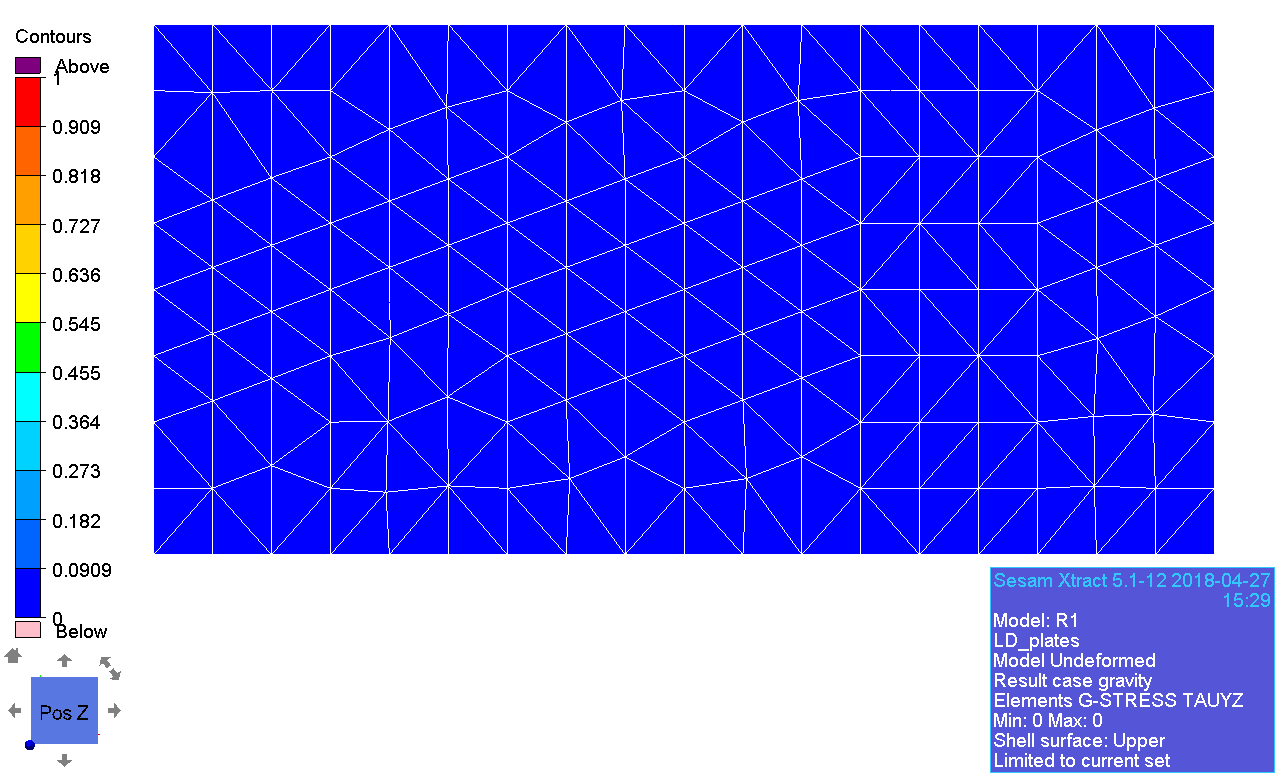
### General stress

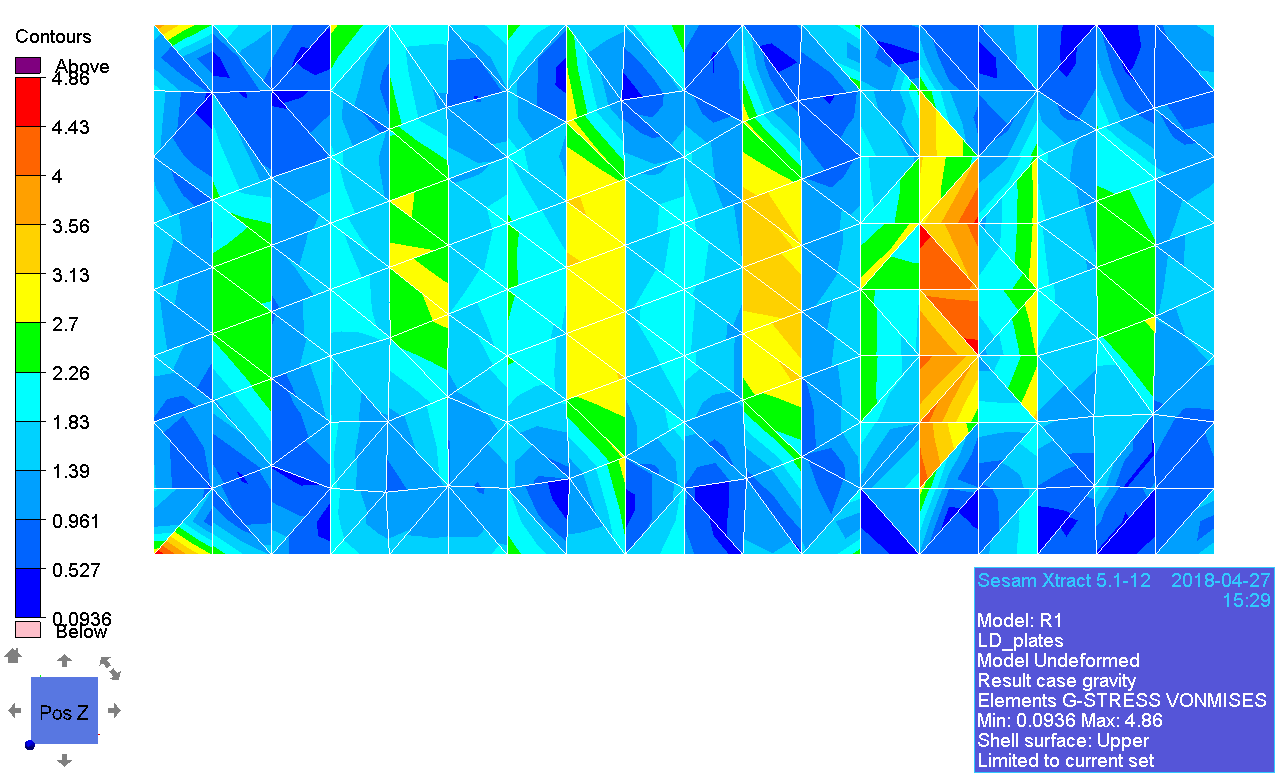


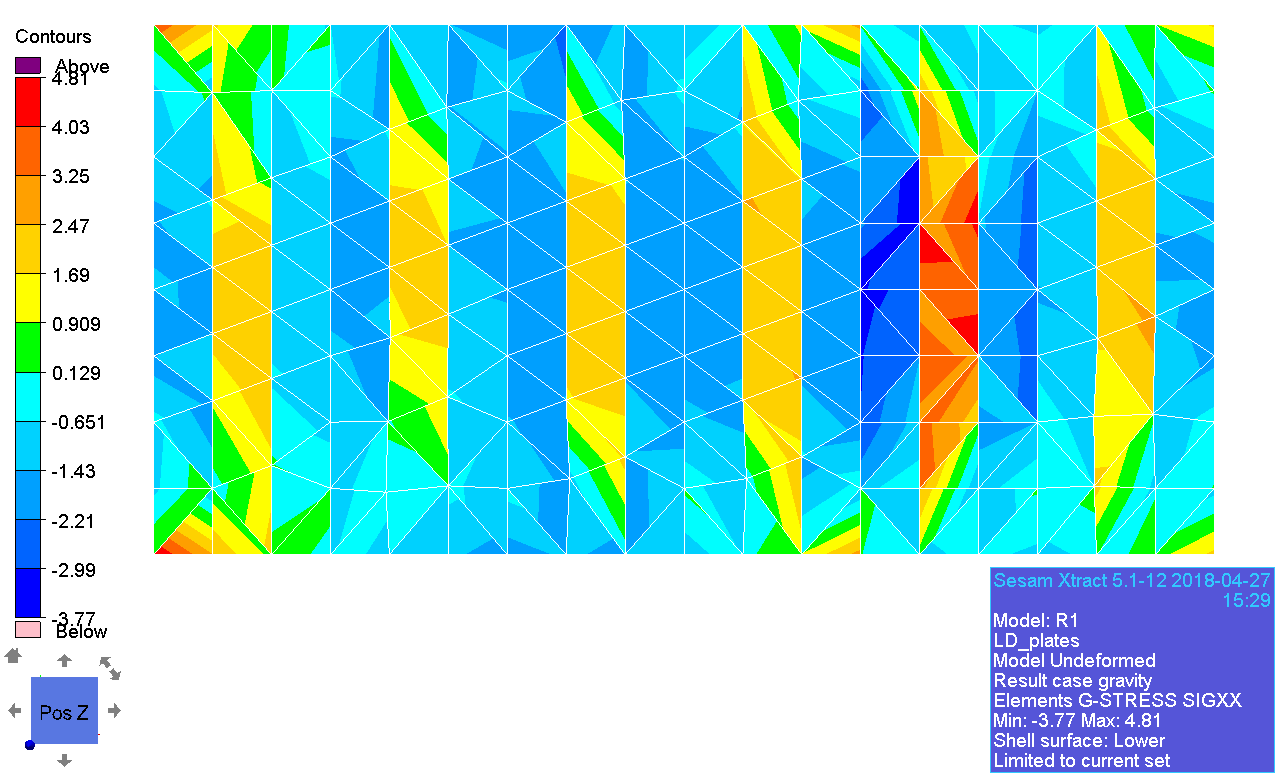


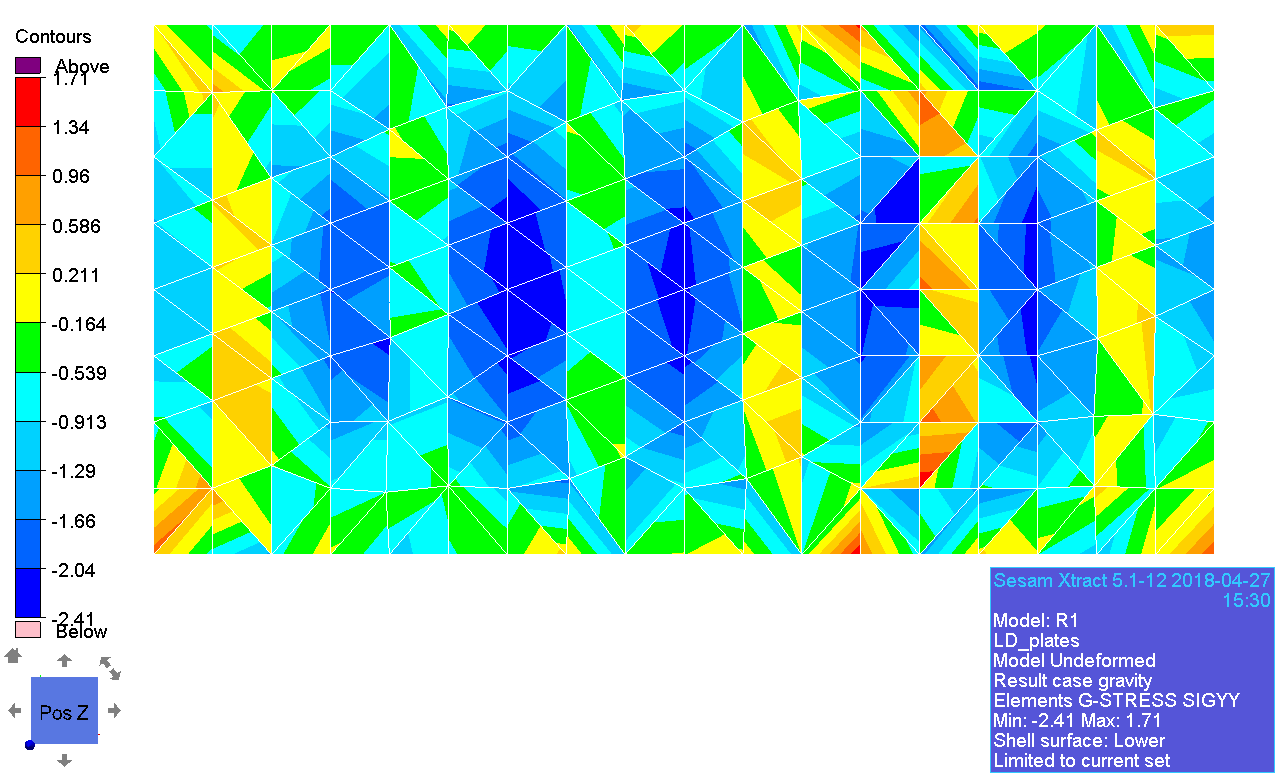


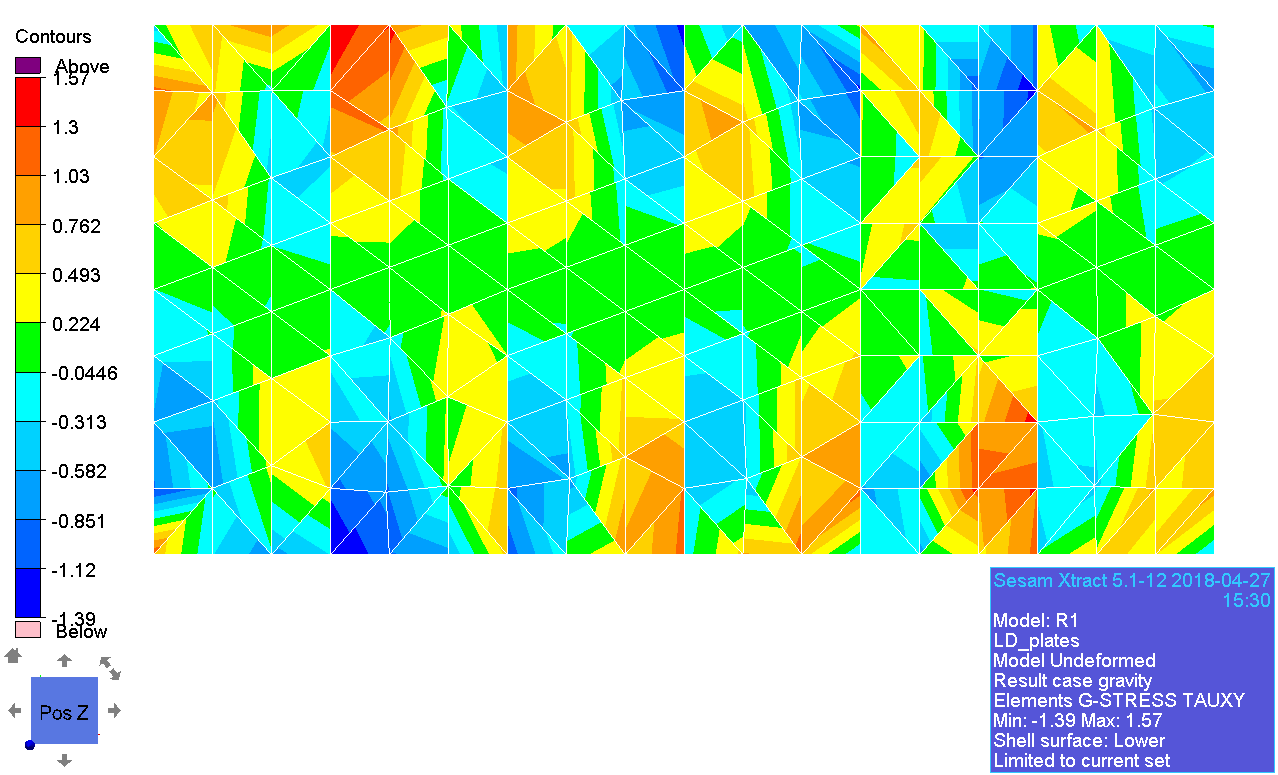


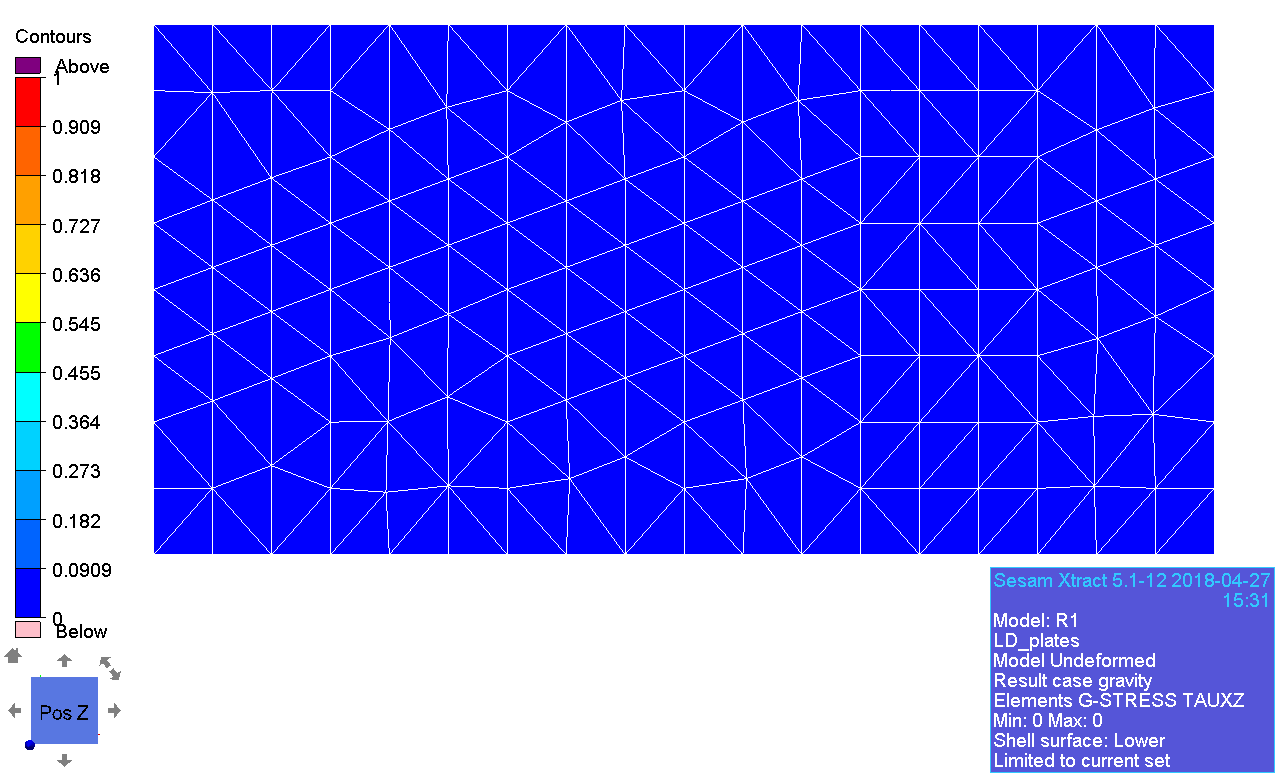


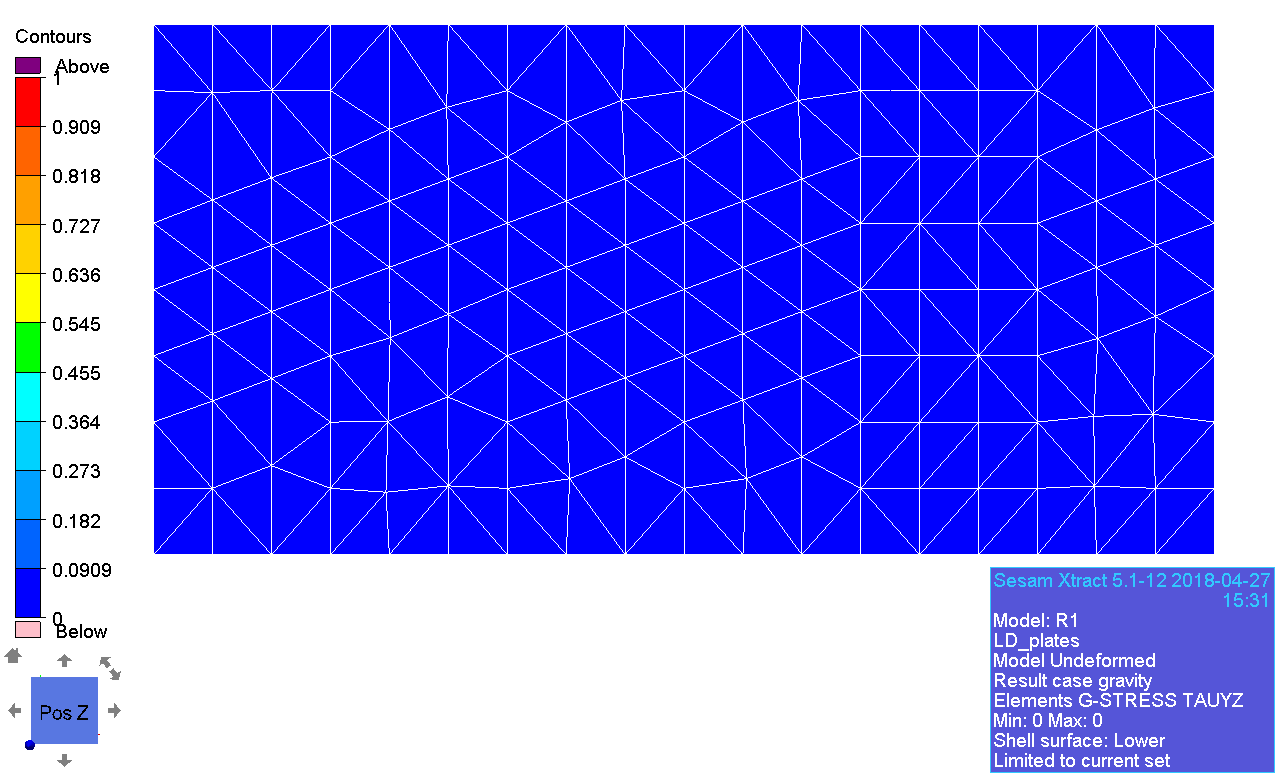


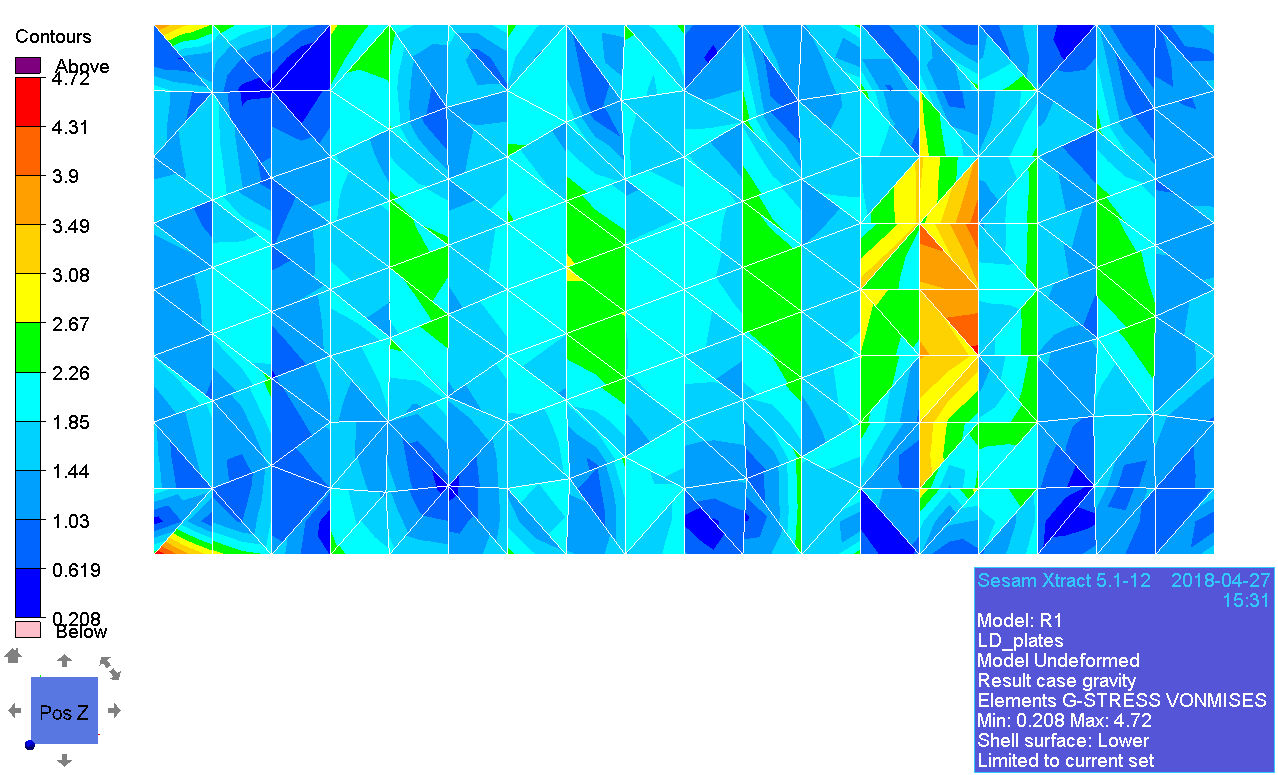




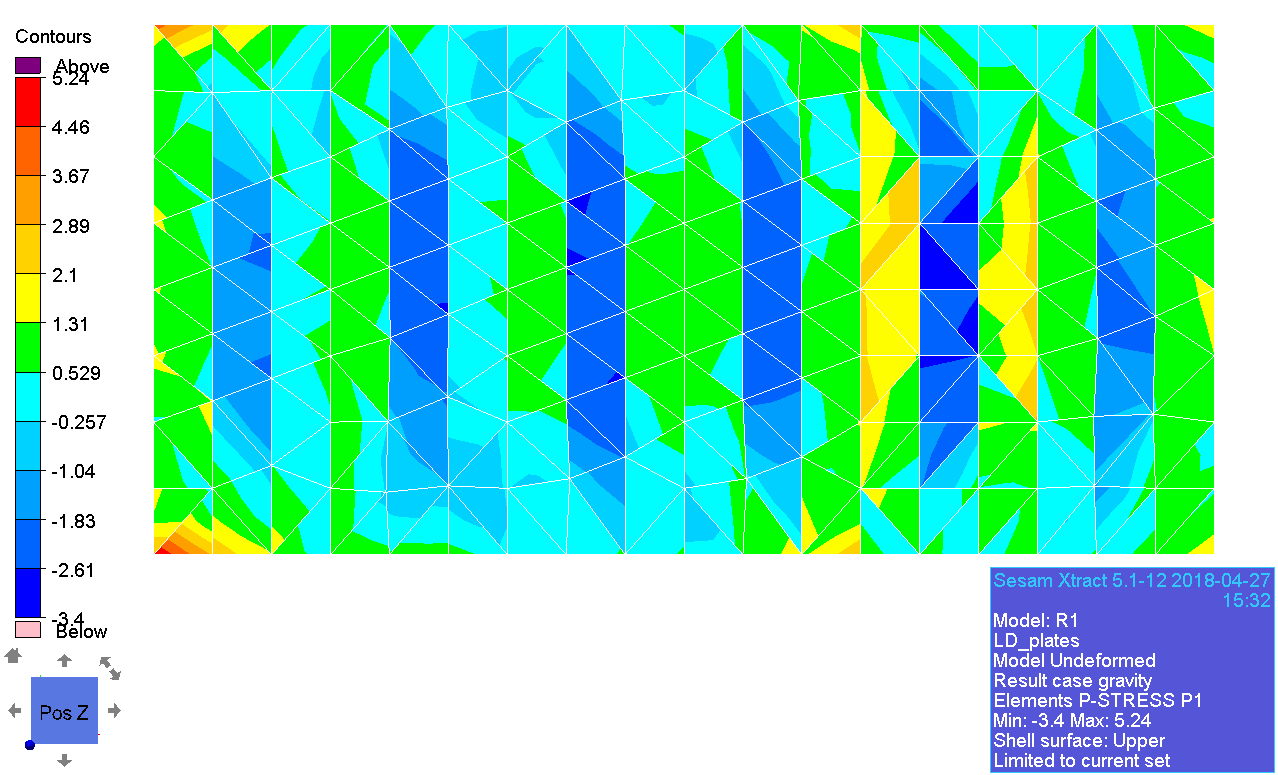




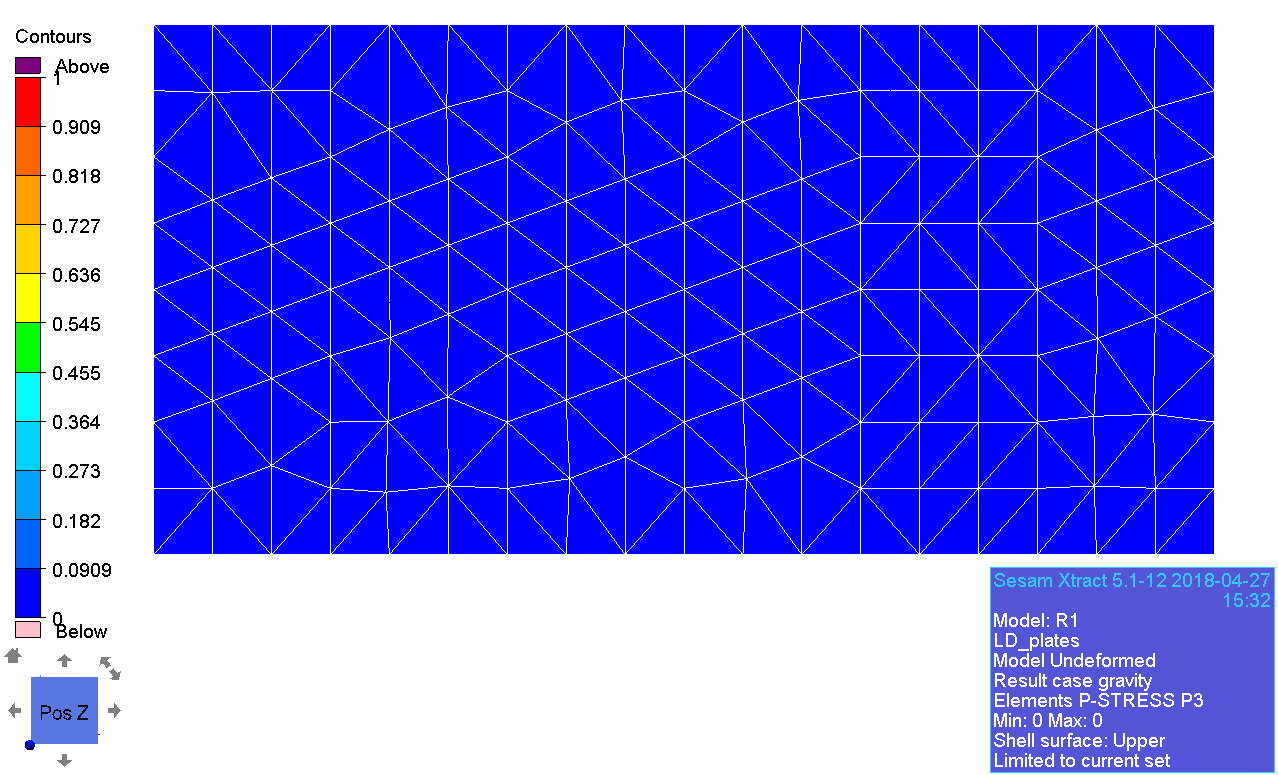


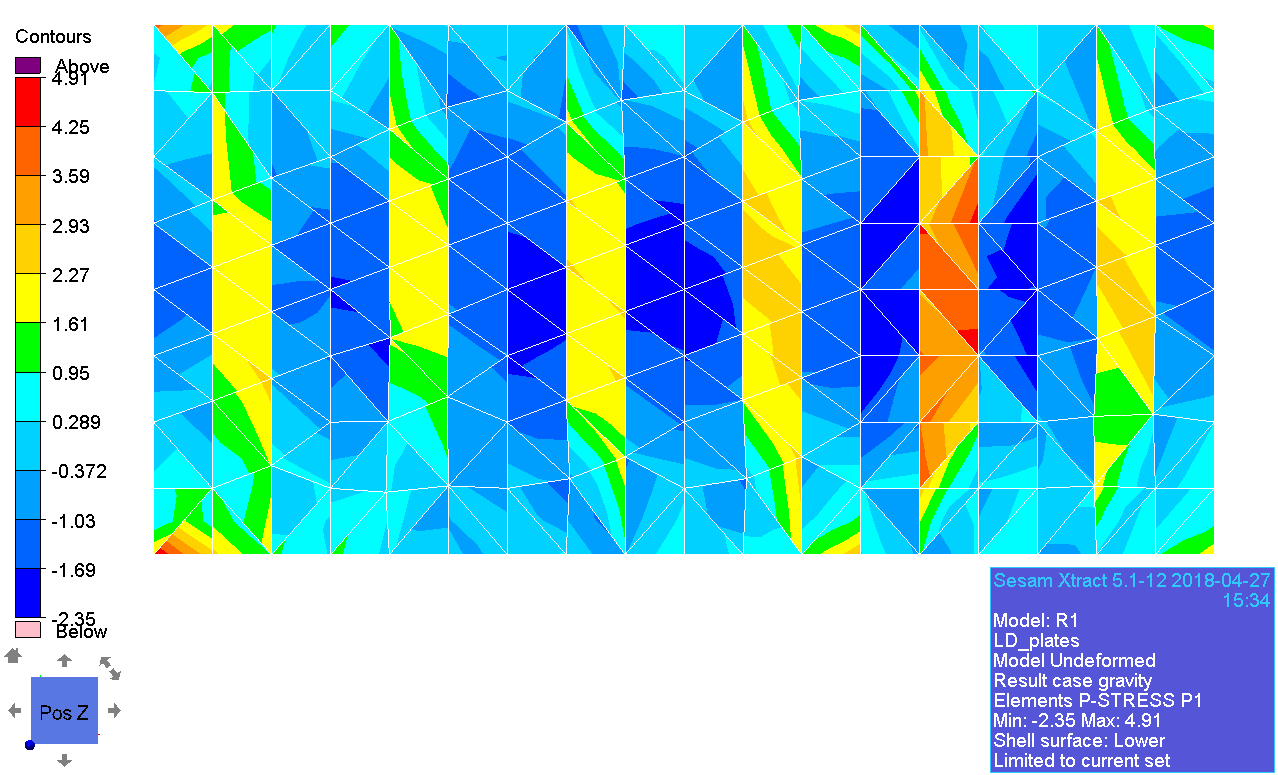


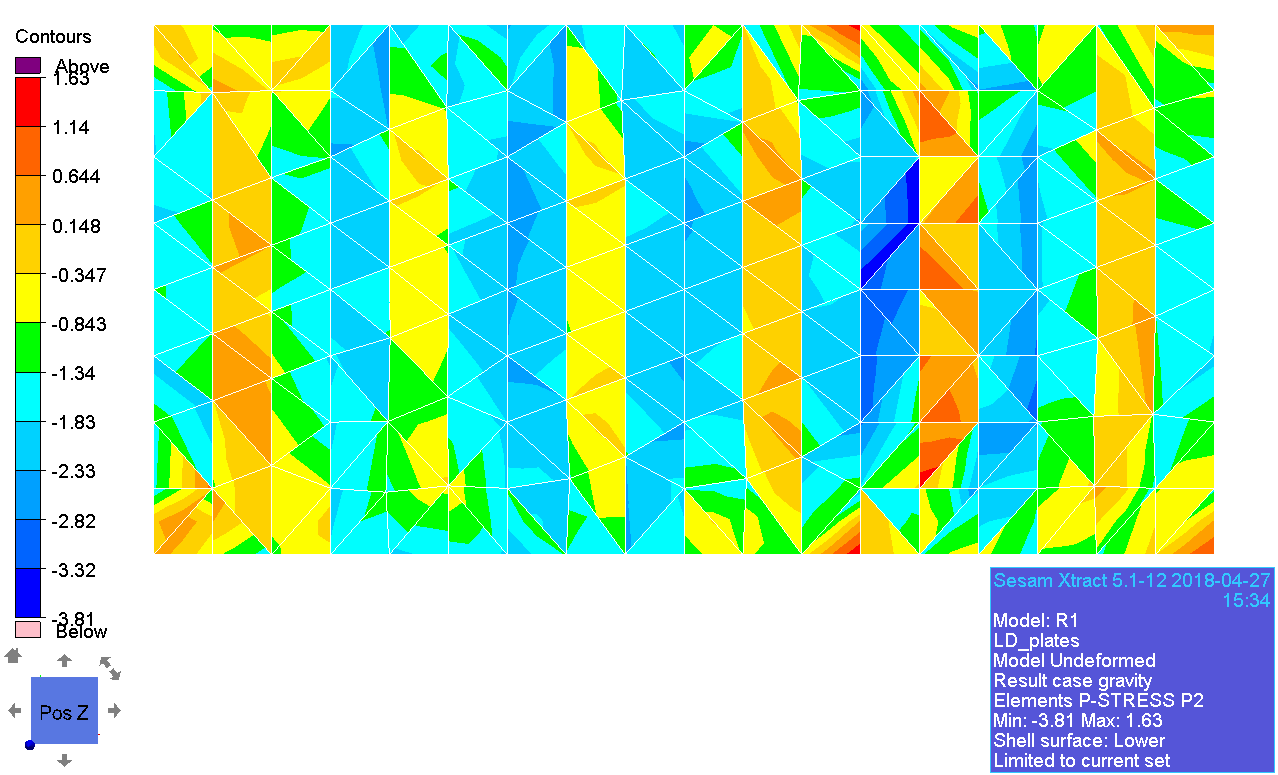
### Principal stress





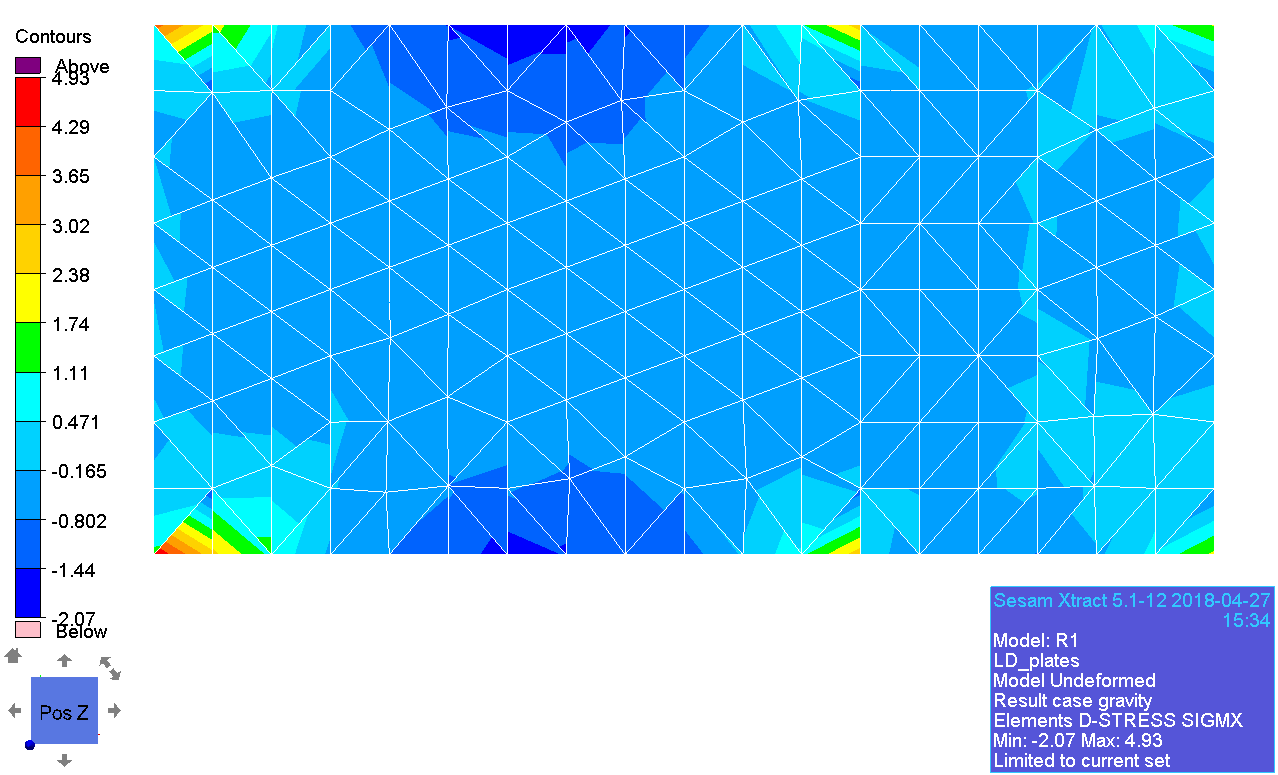


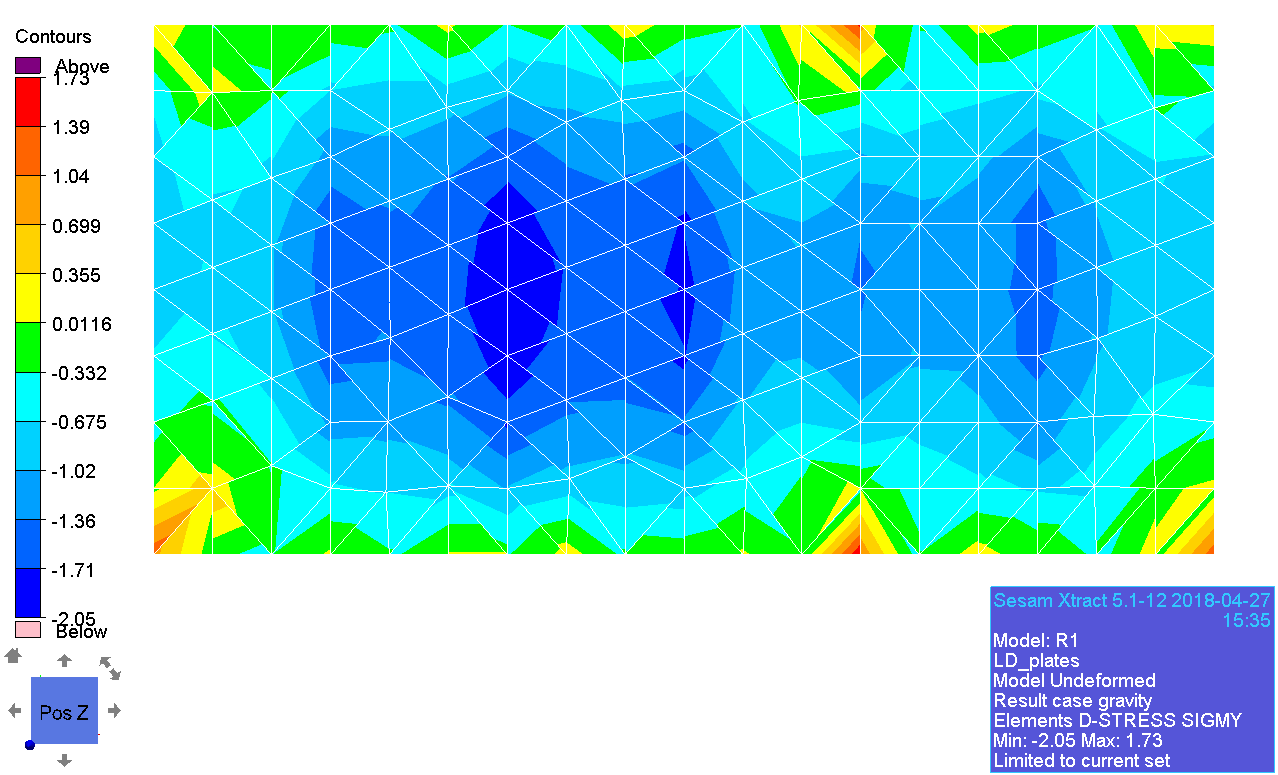


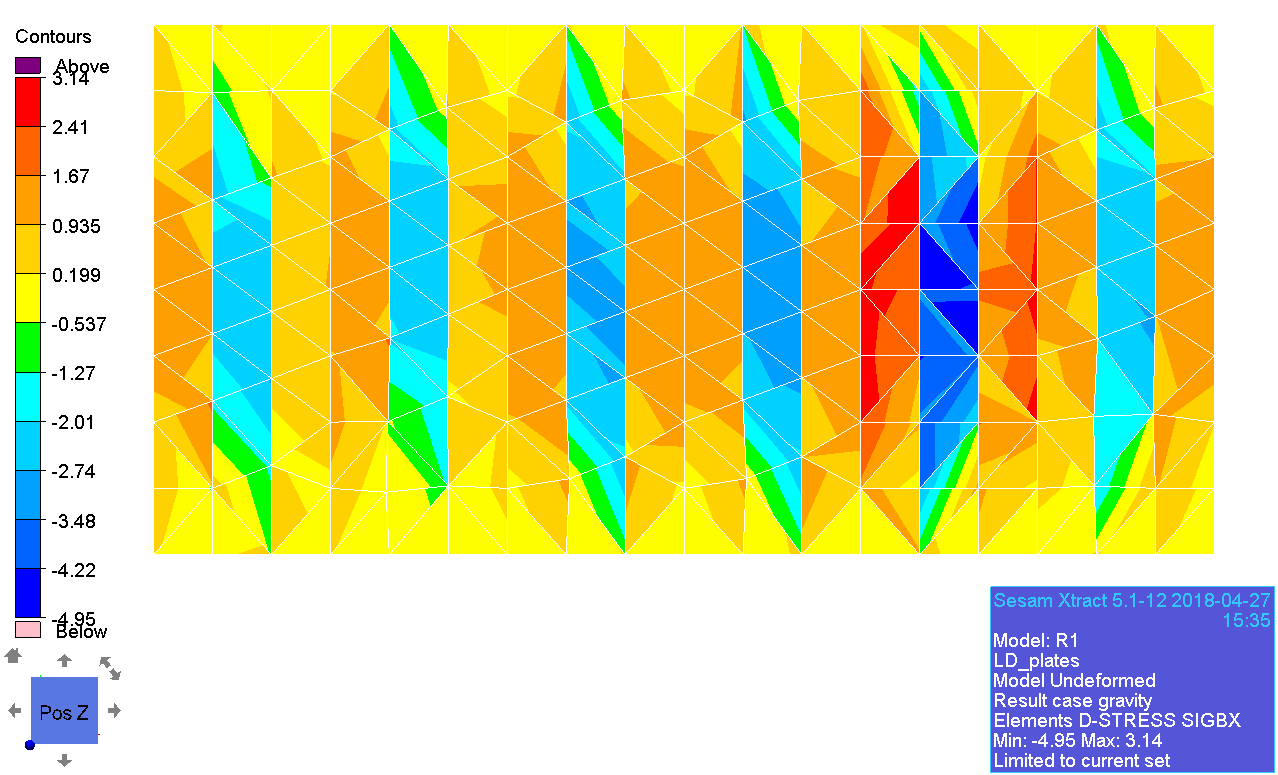


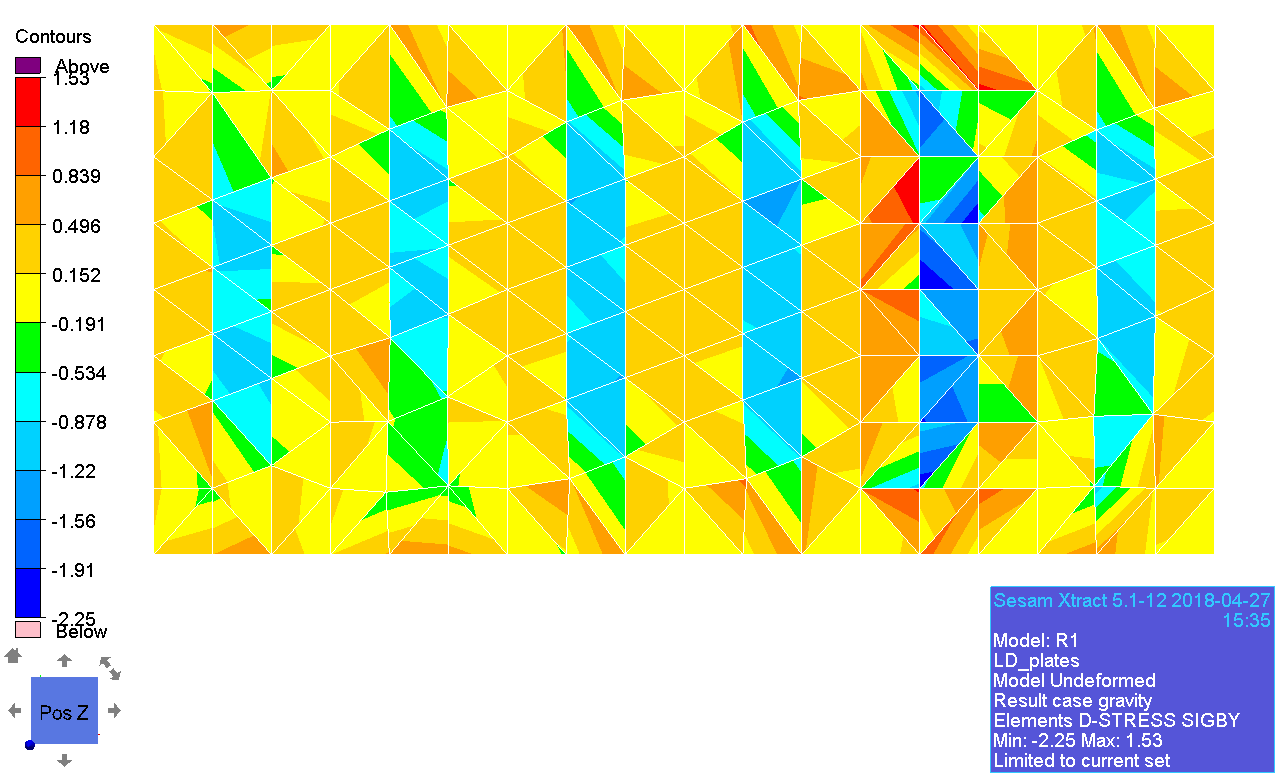


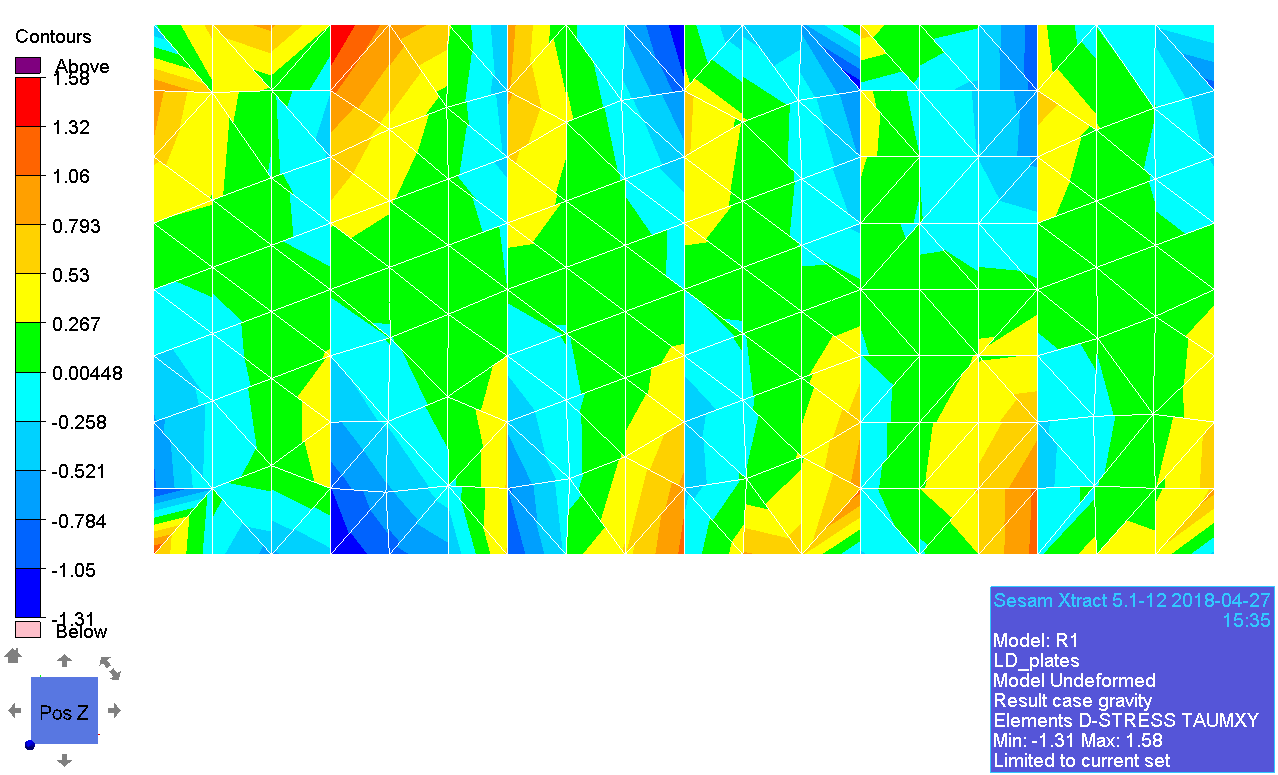
### Decomposed stress

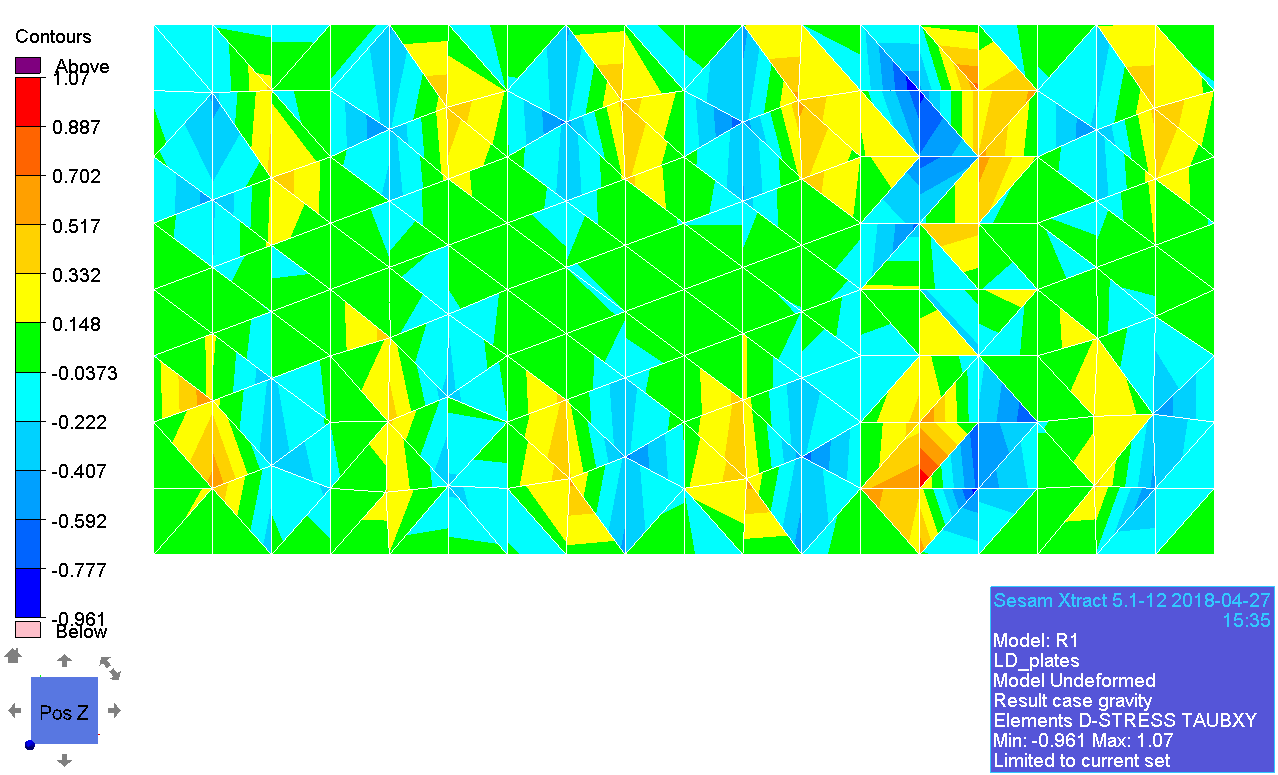




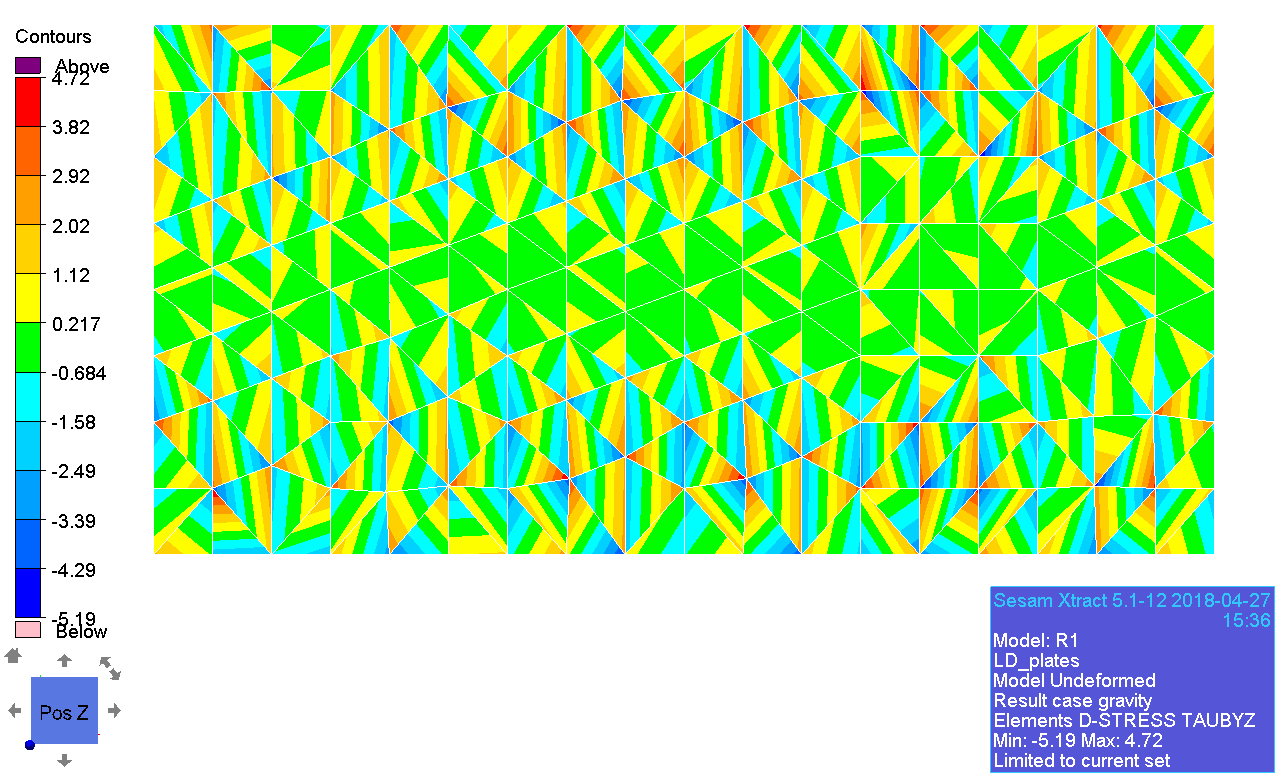


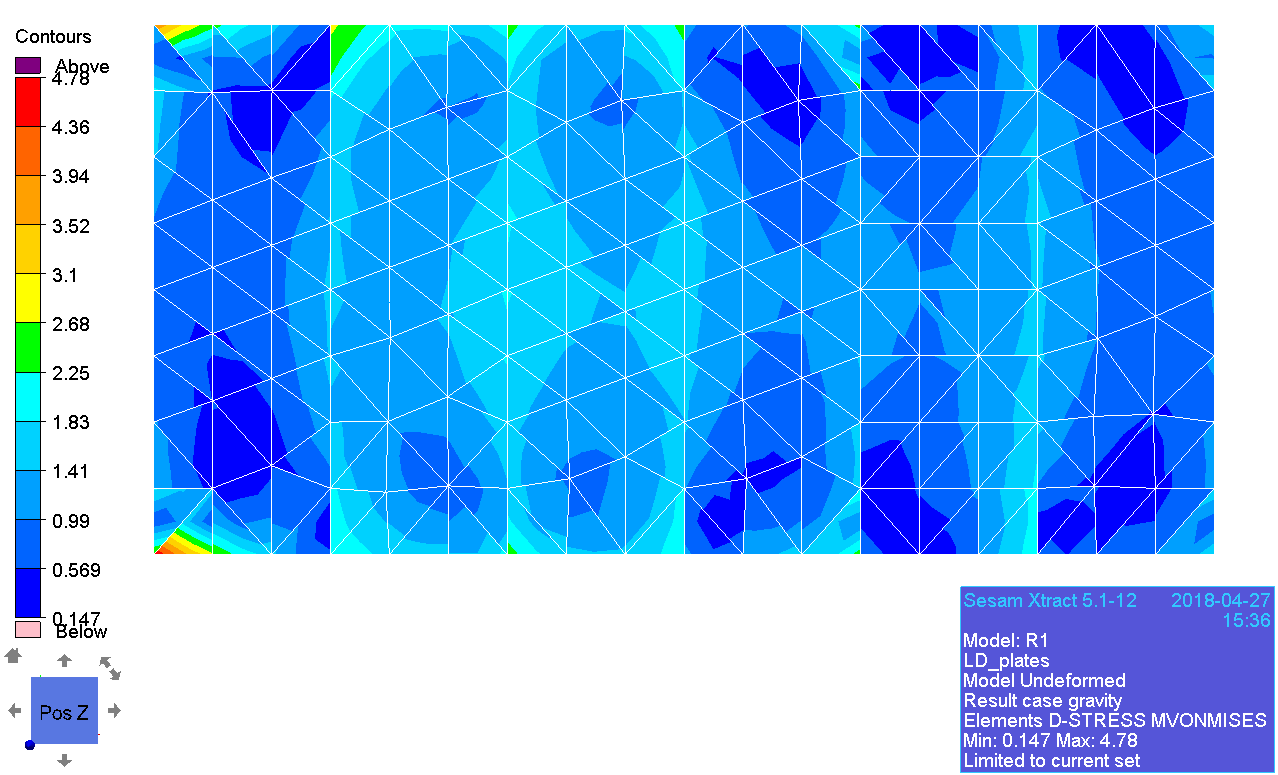




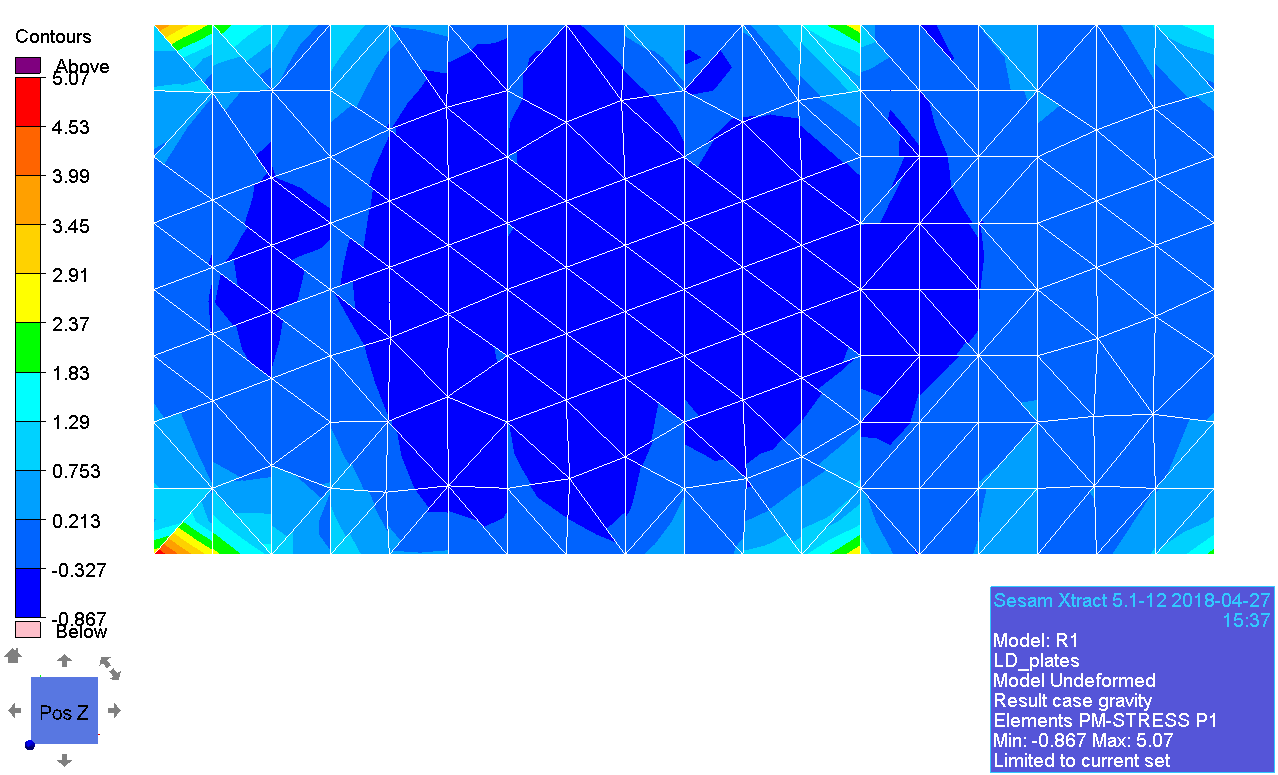


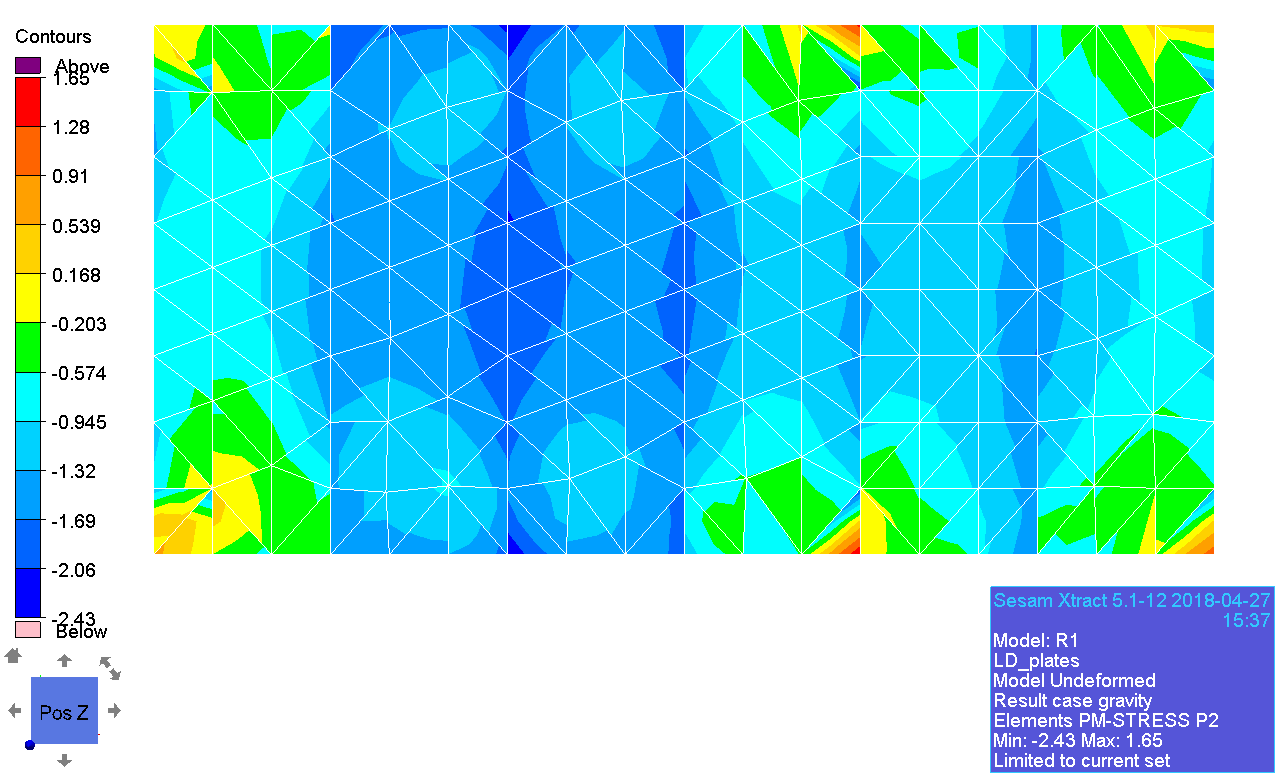




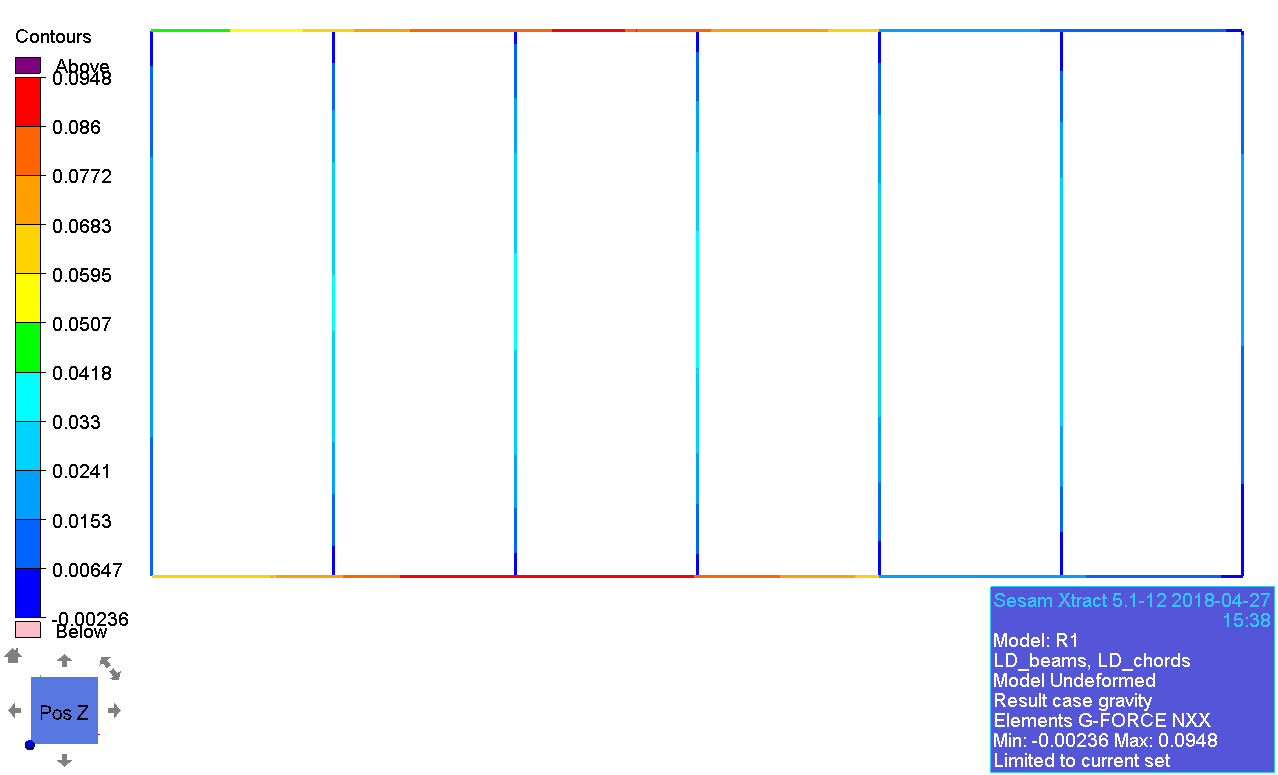


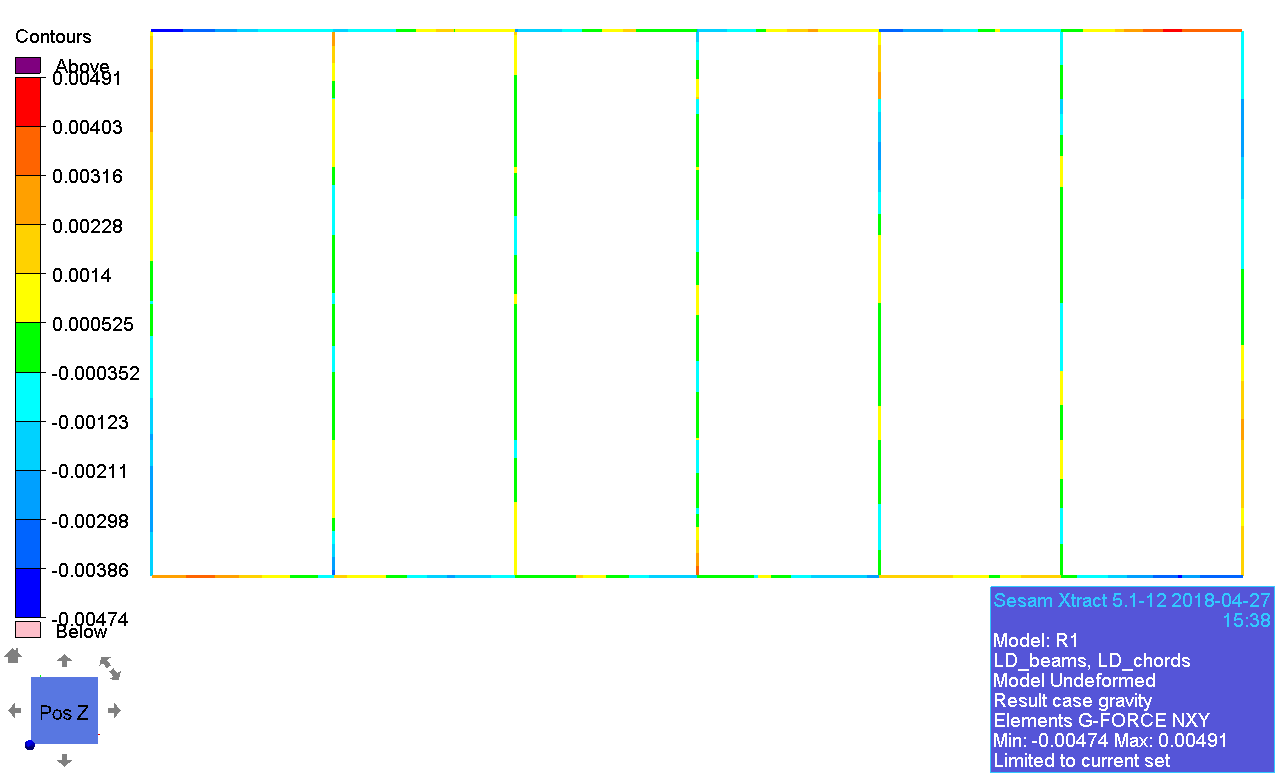
### Membrane principal stress

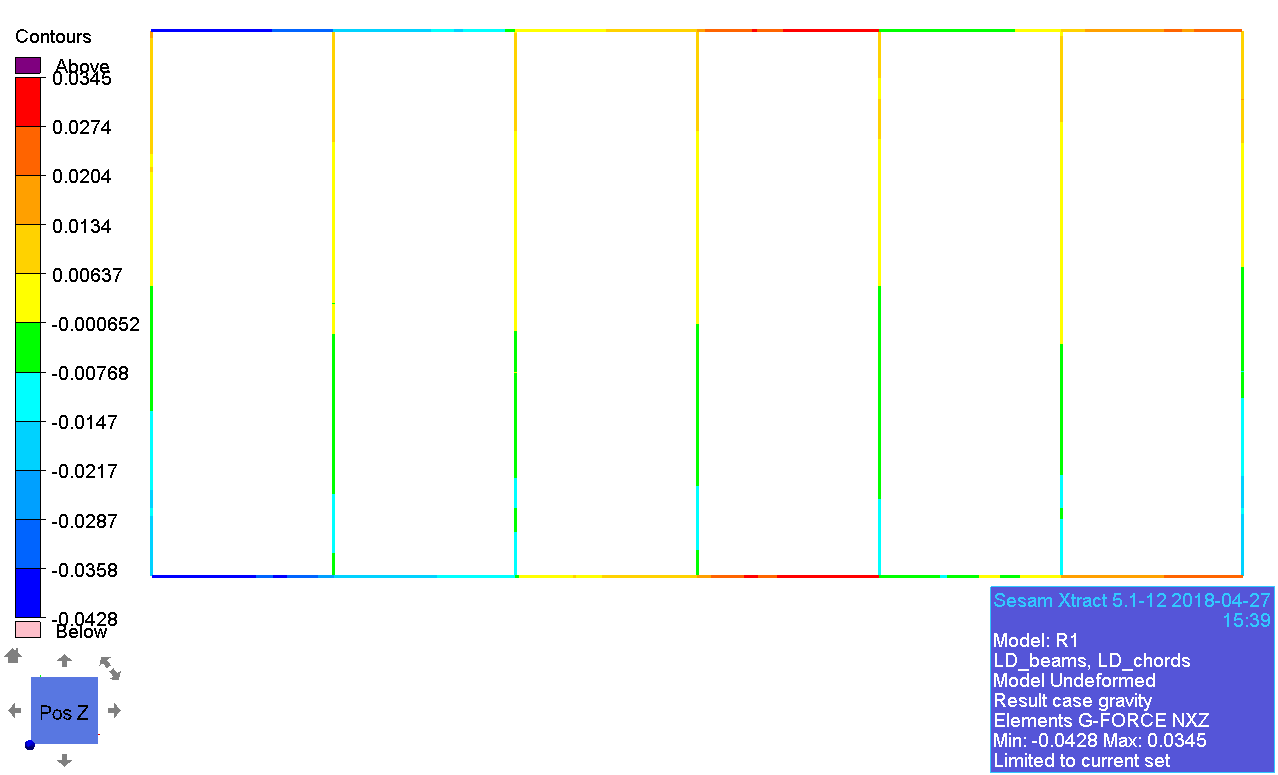


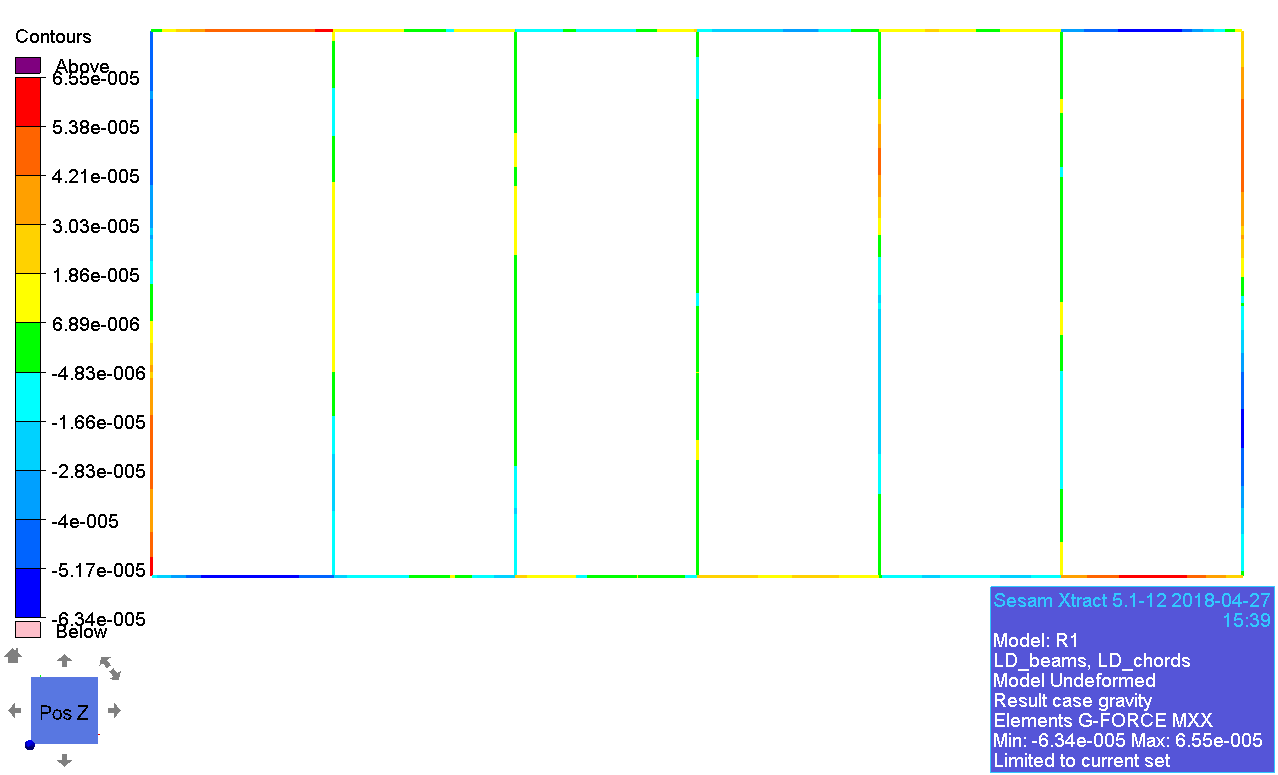


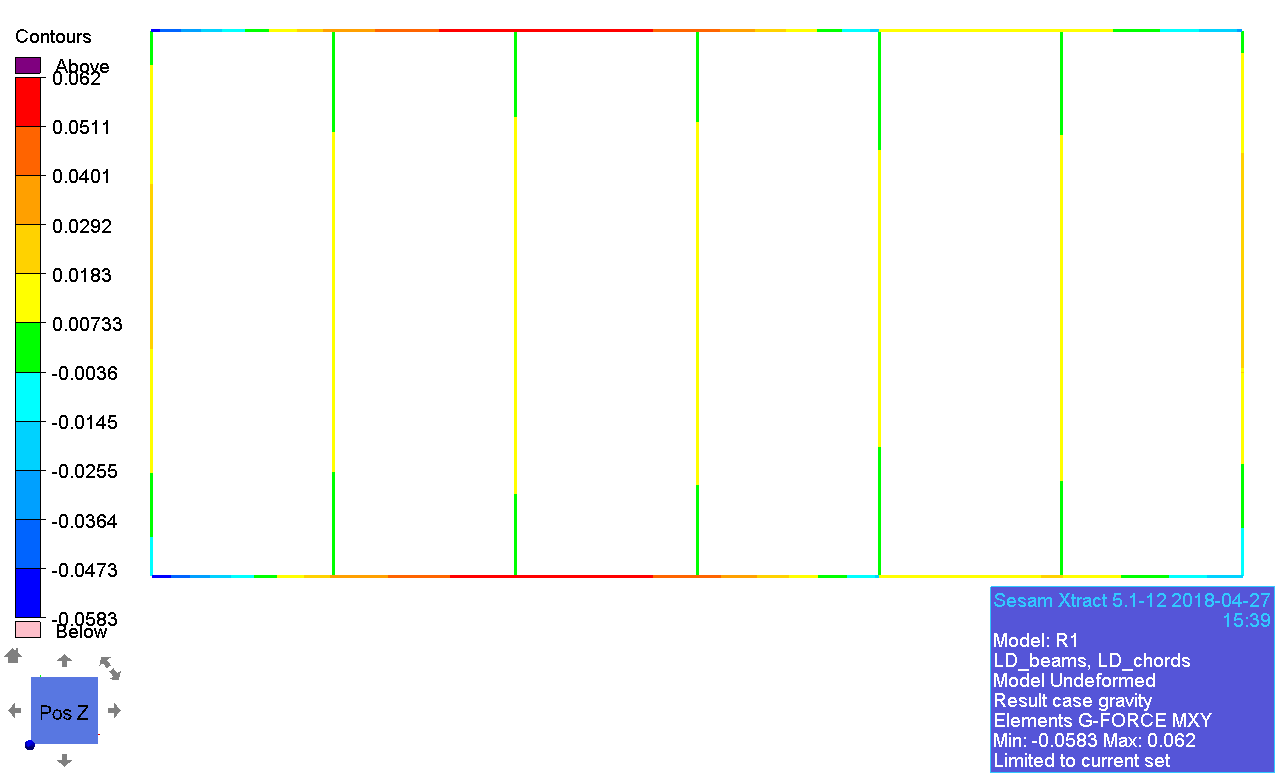
### Beam forces

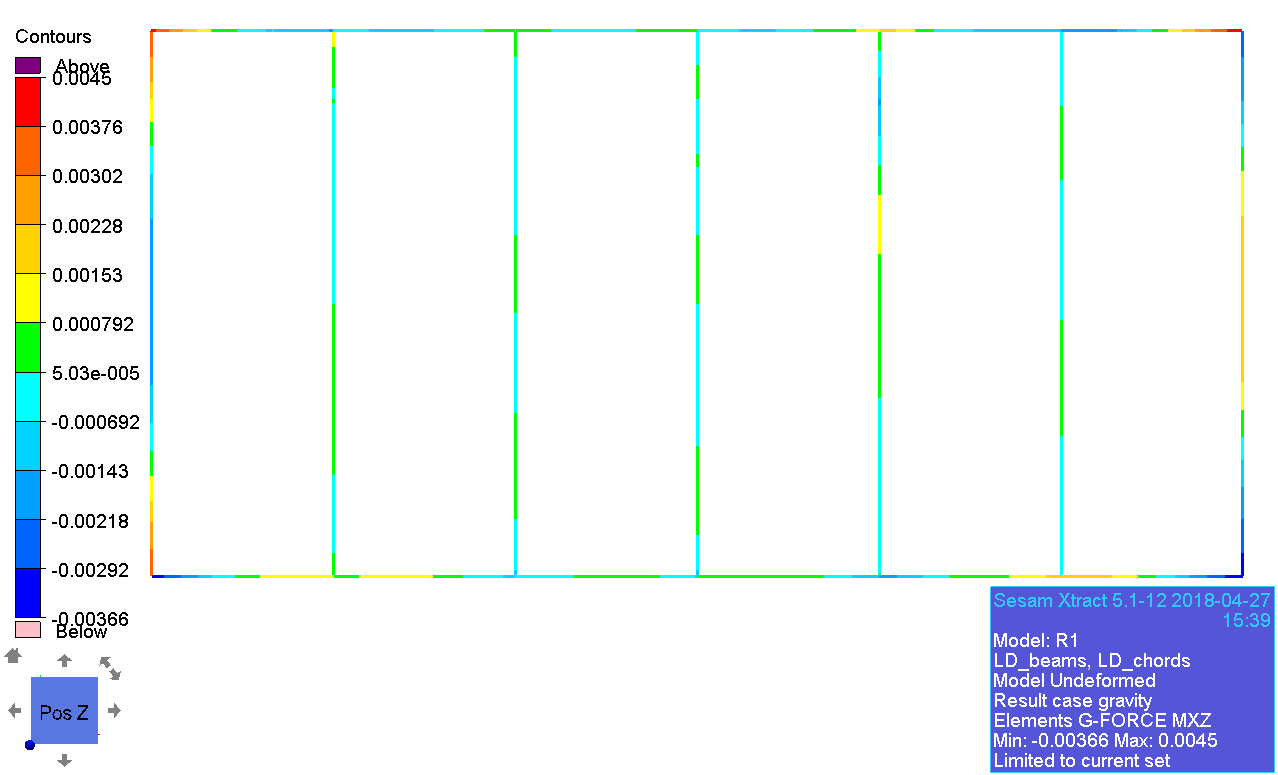




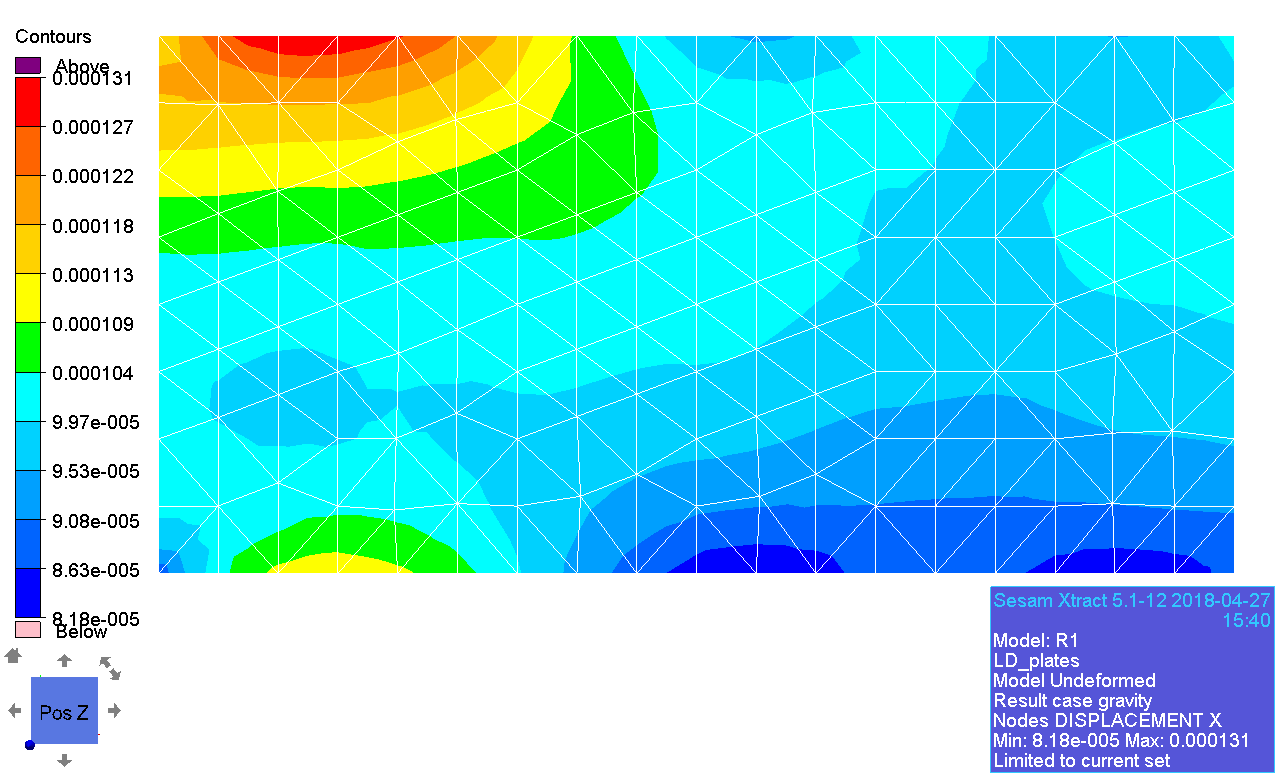


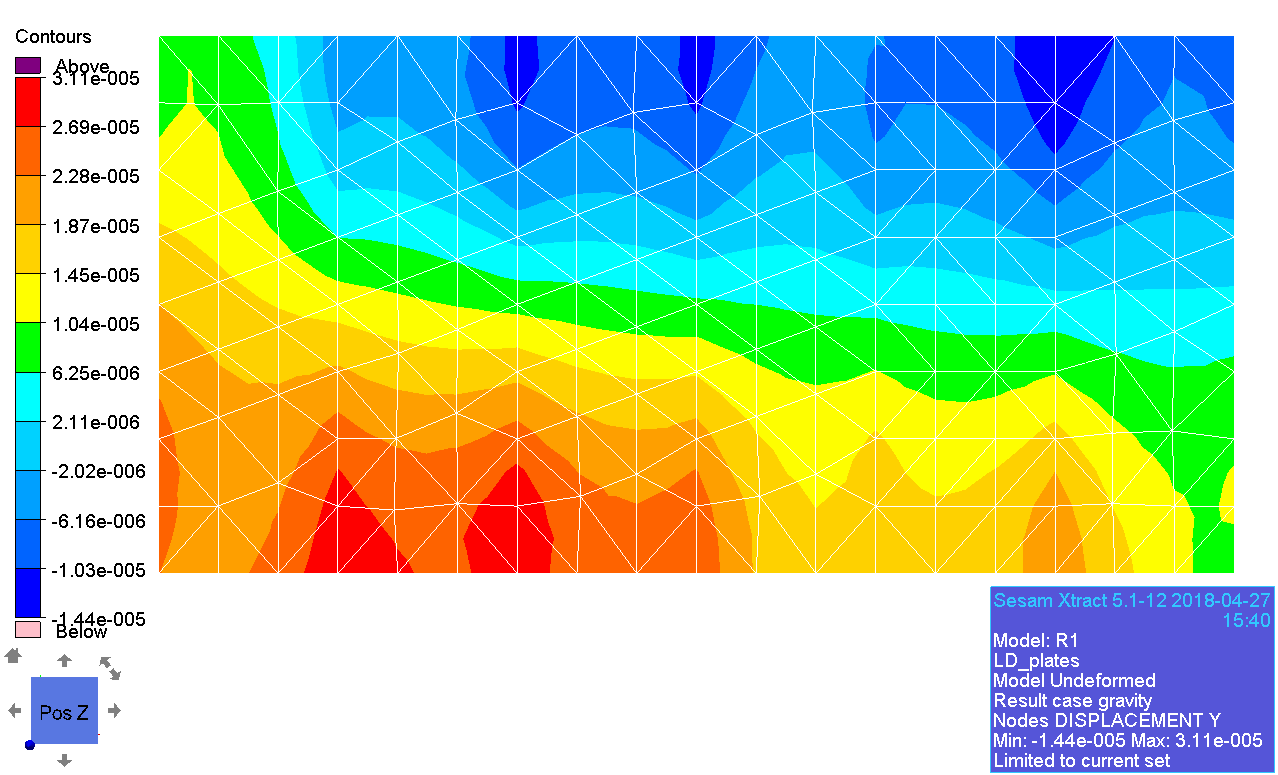


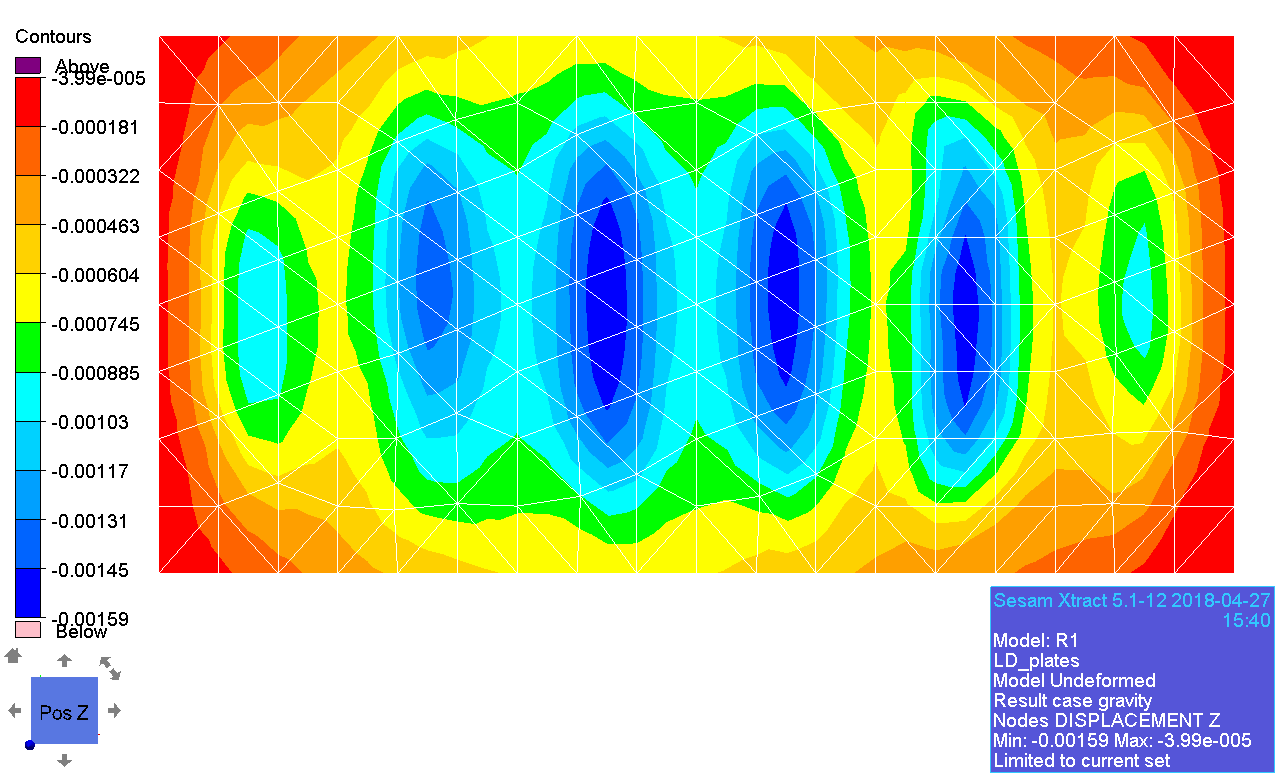


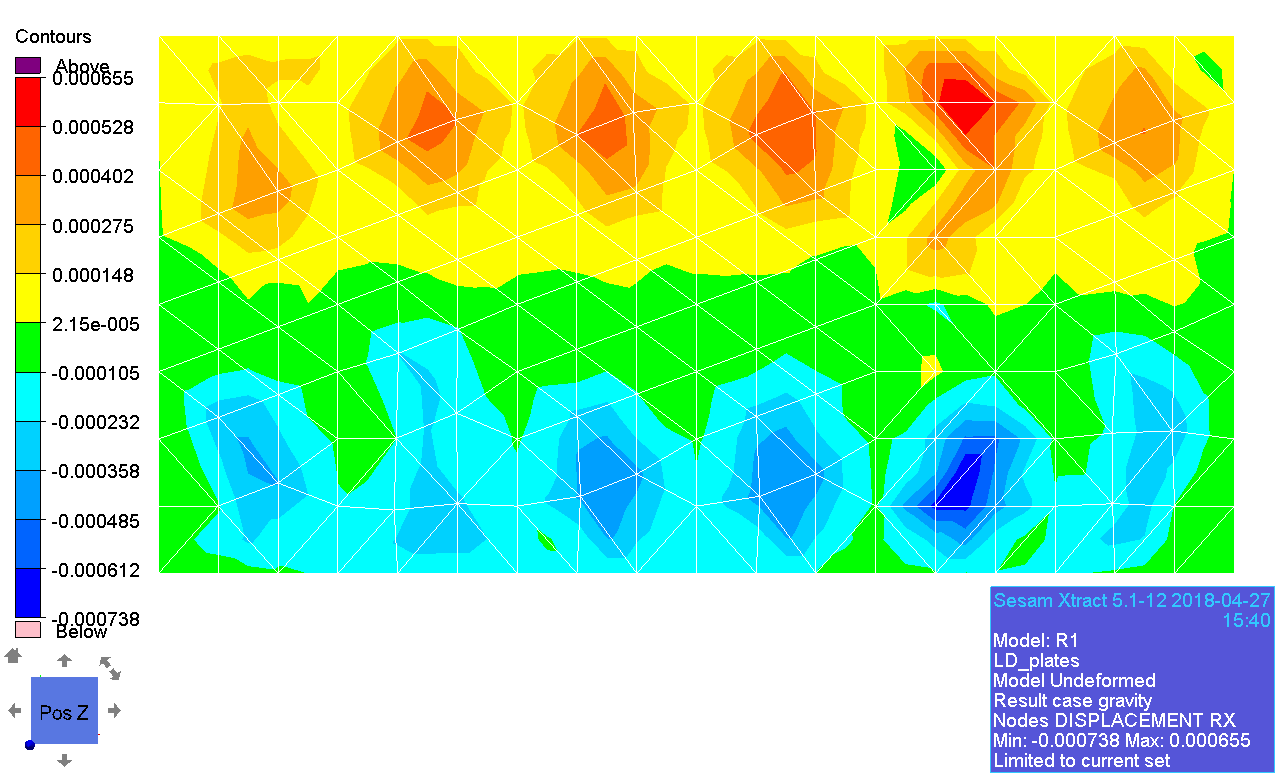


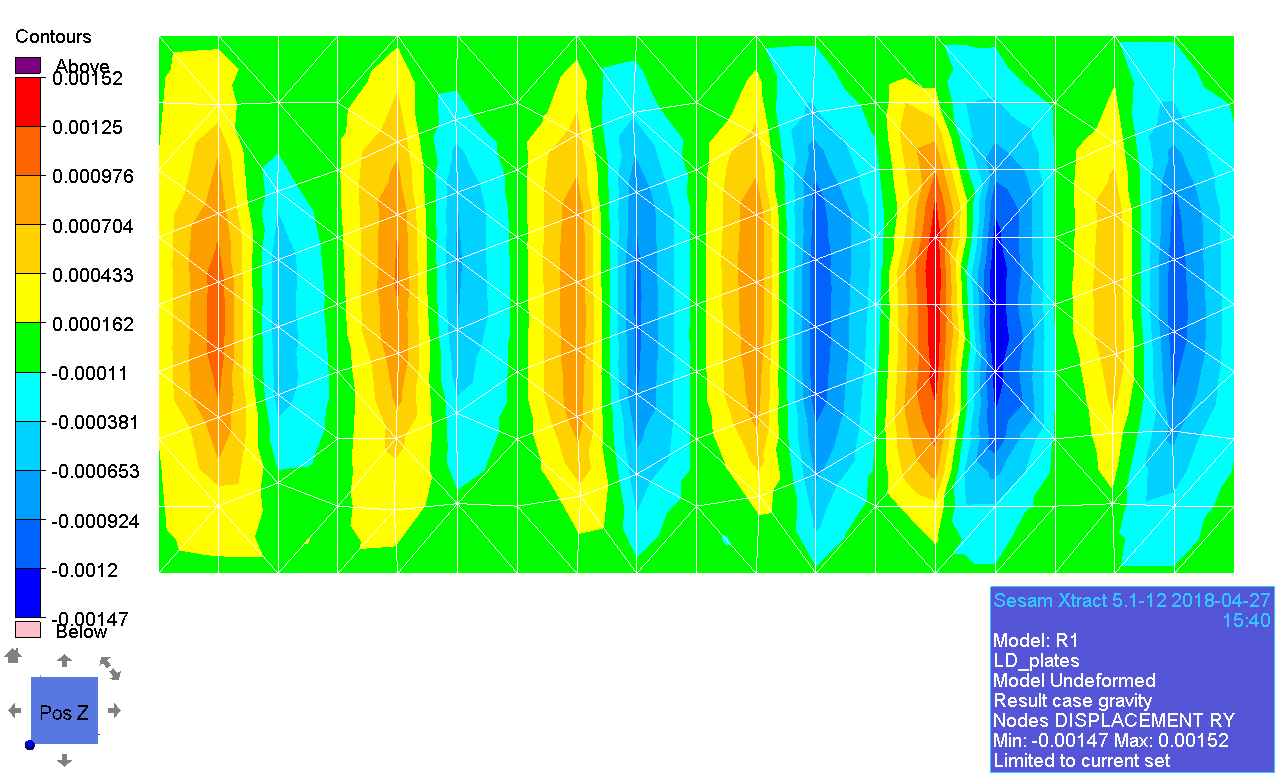
### Displacement

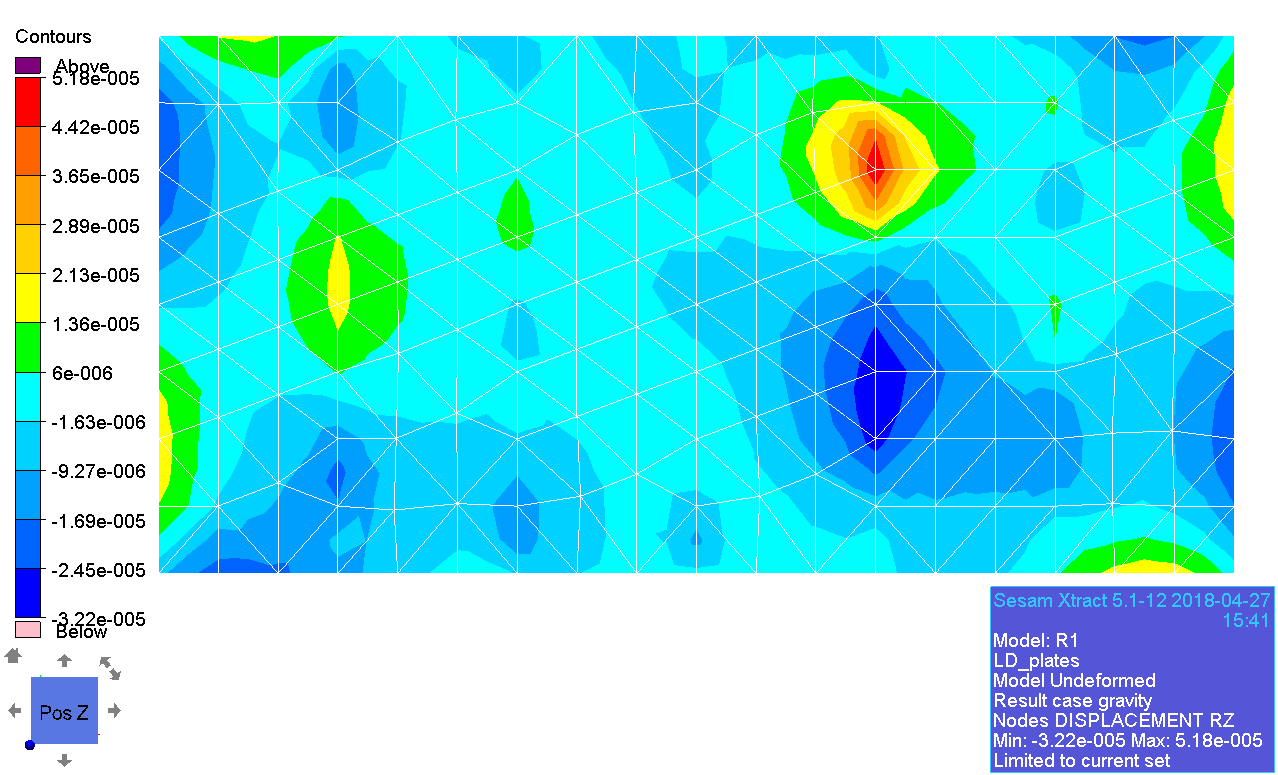






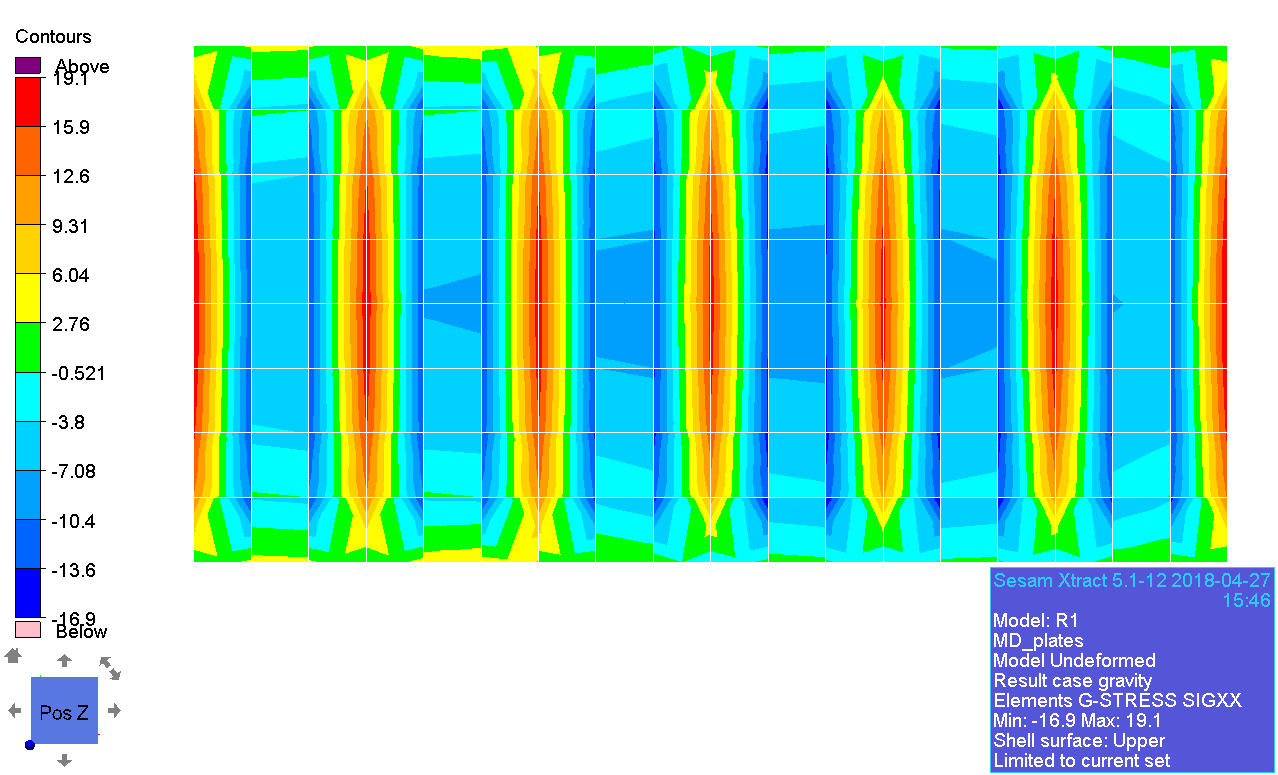


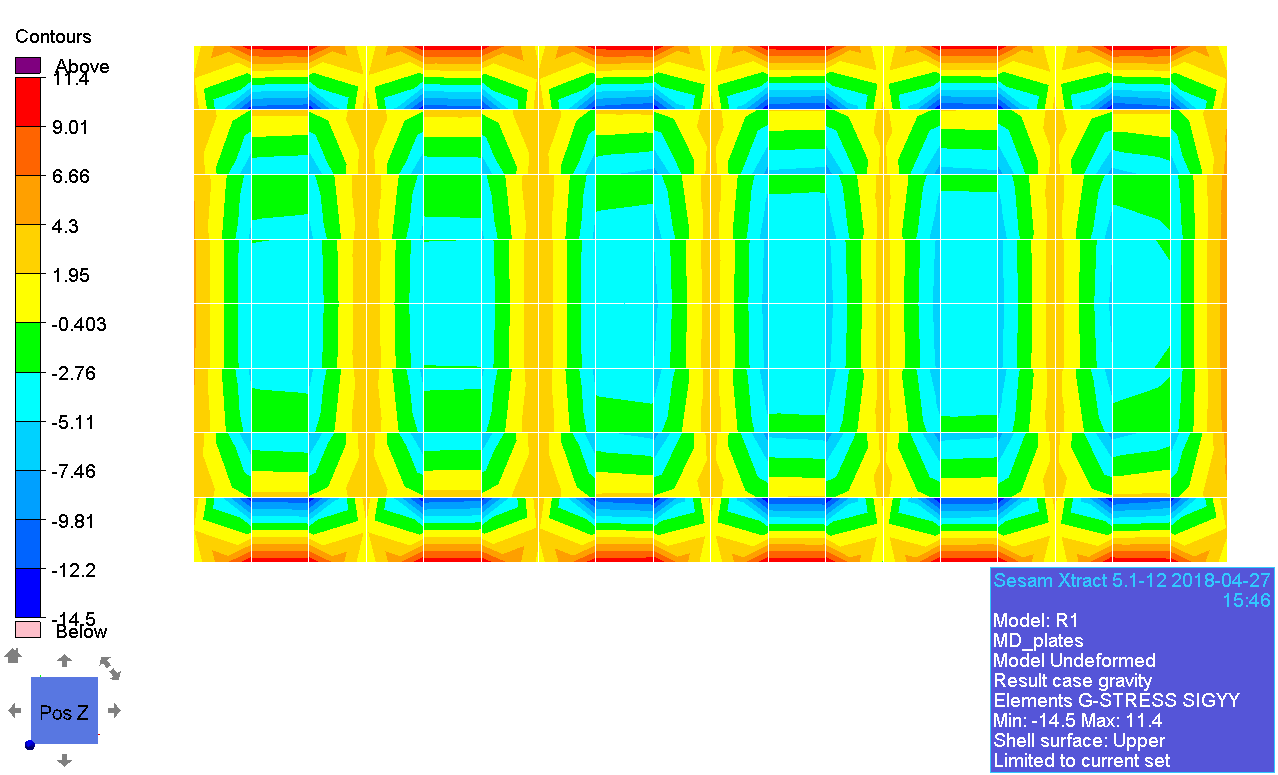


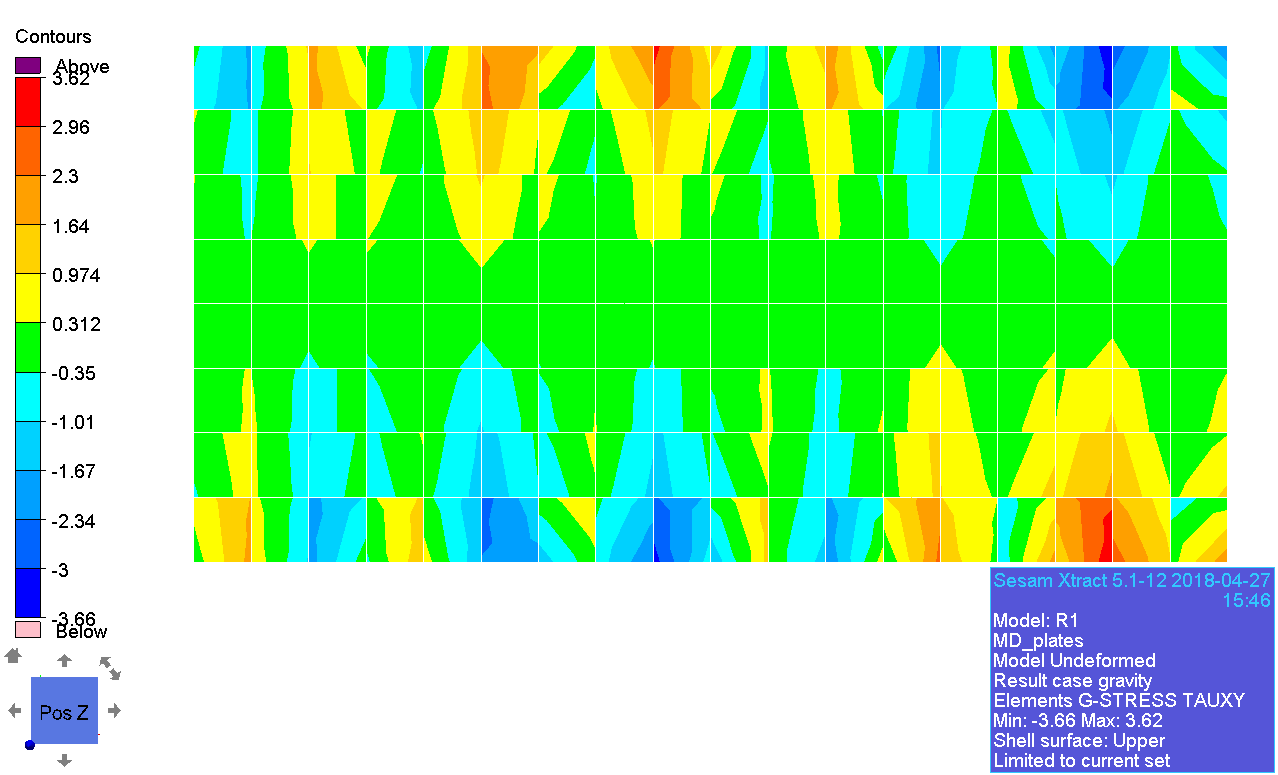


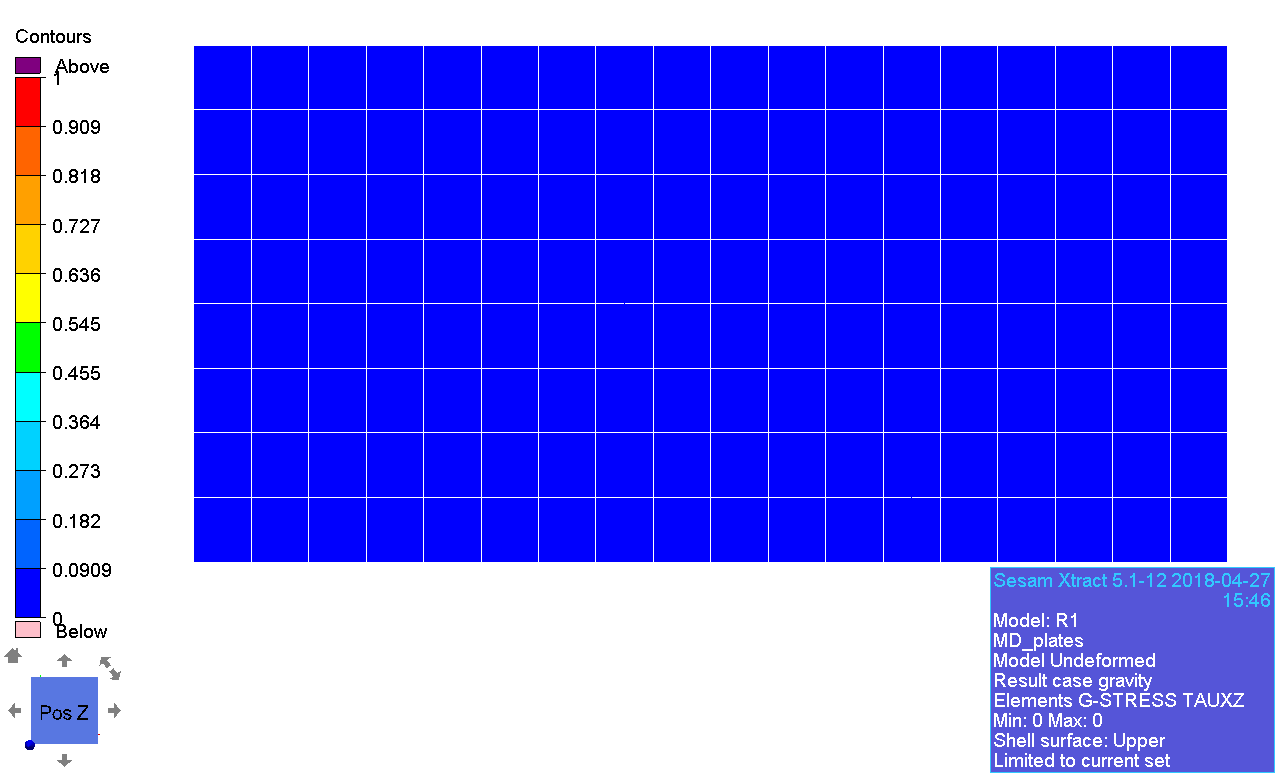
## MD

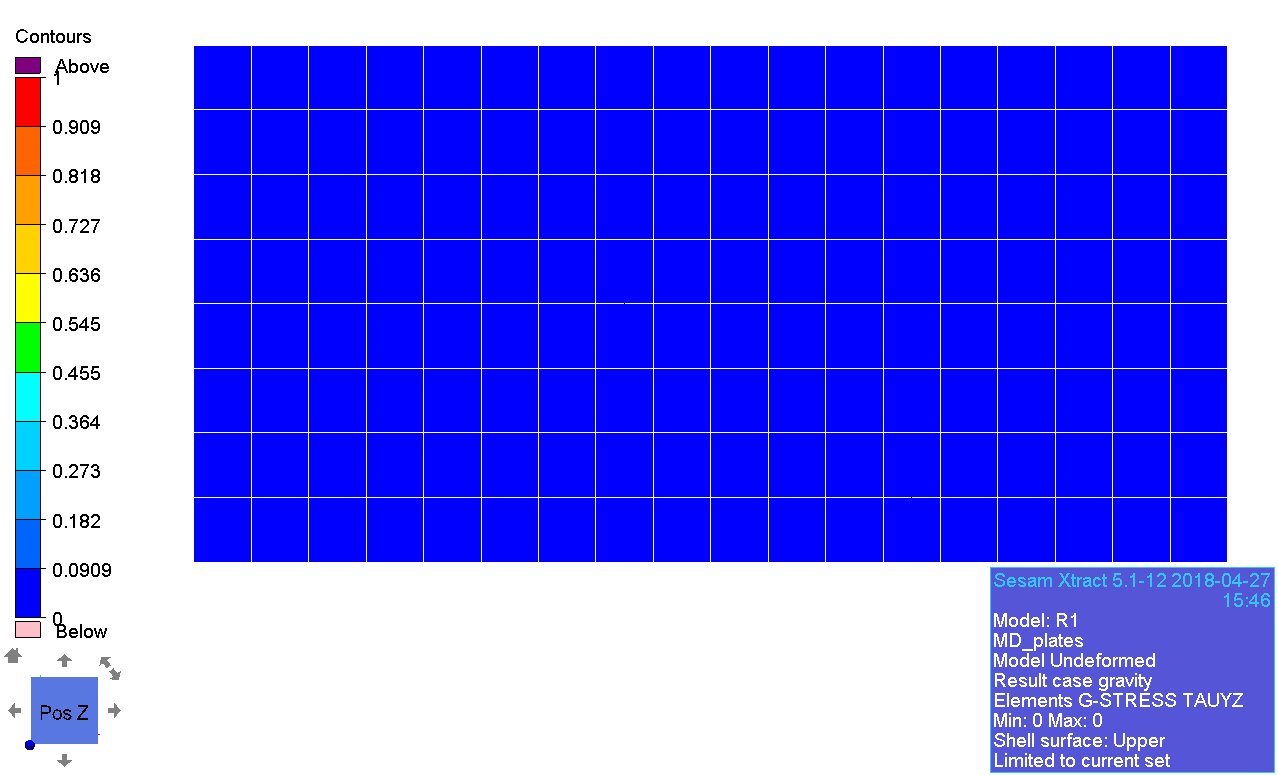
### General stress

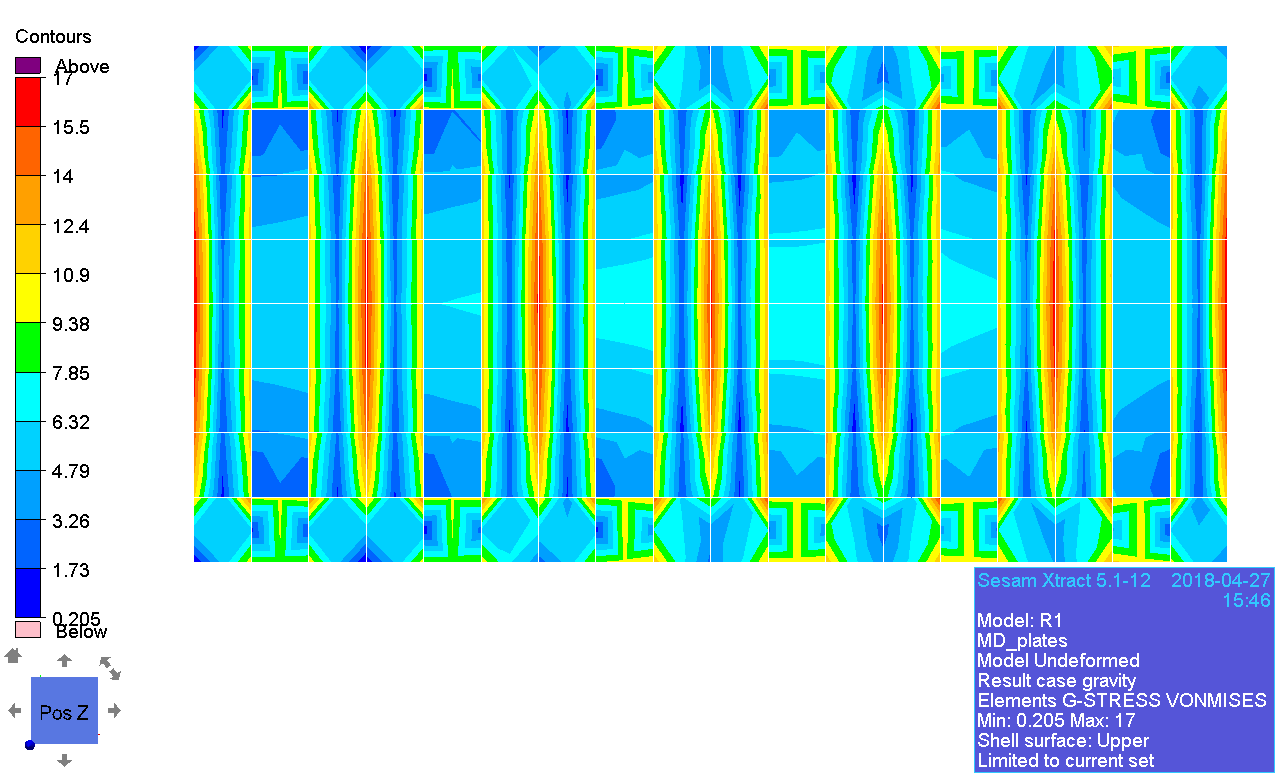


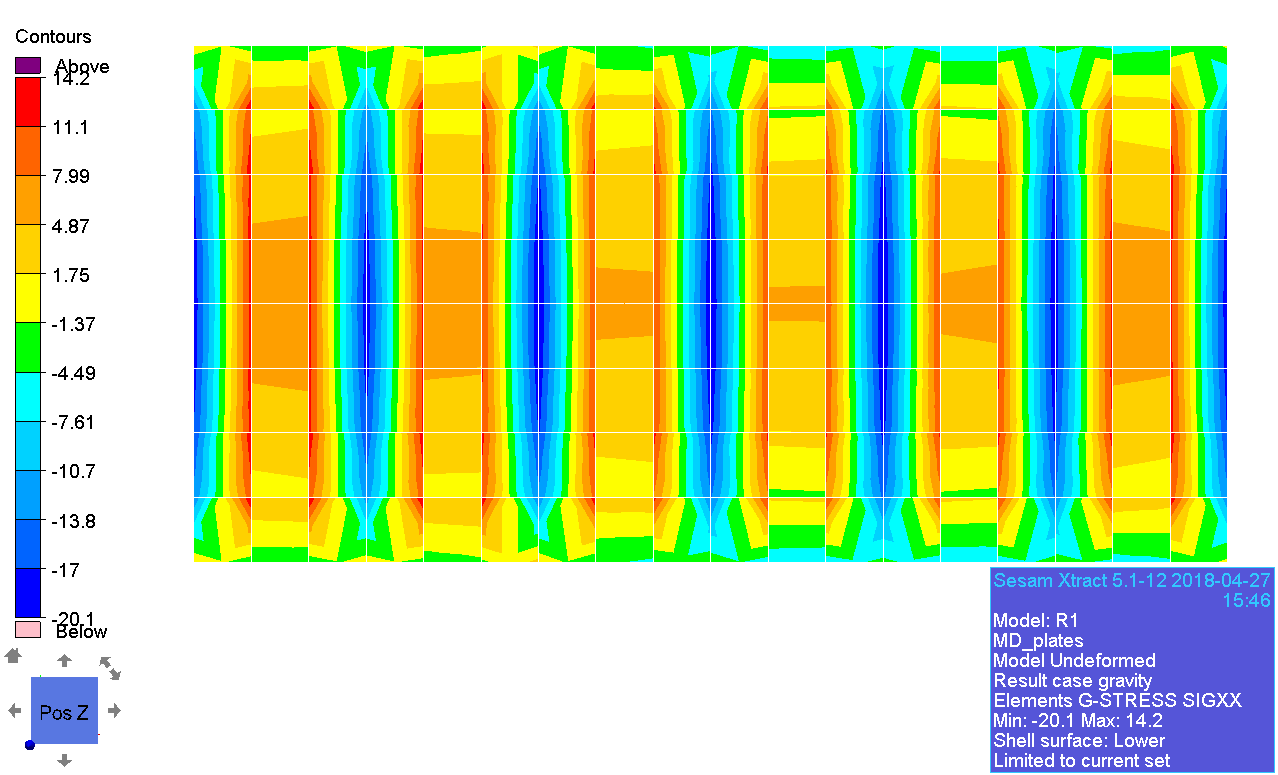


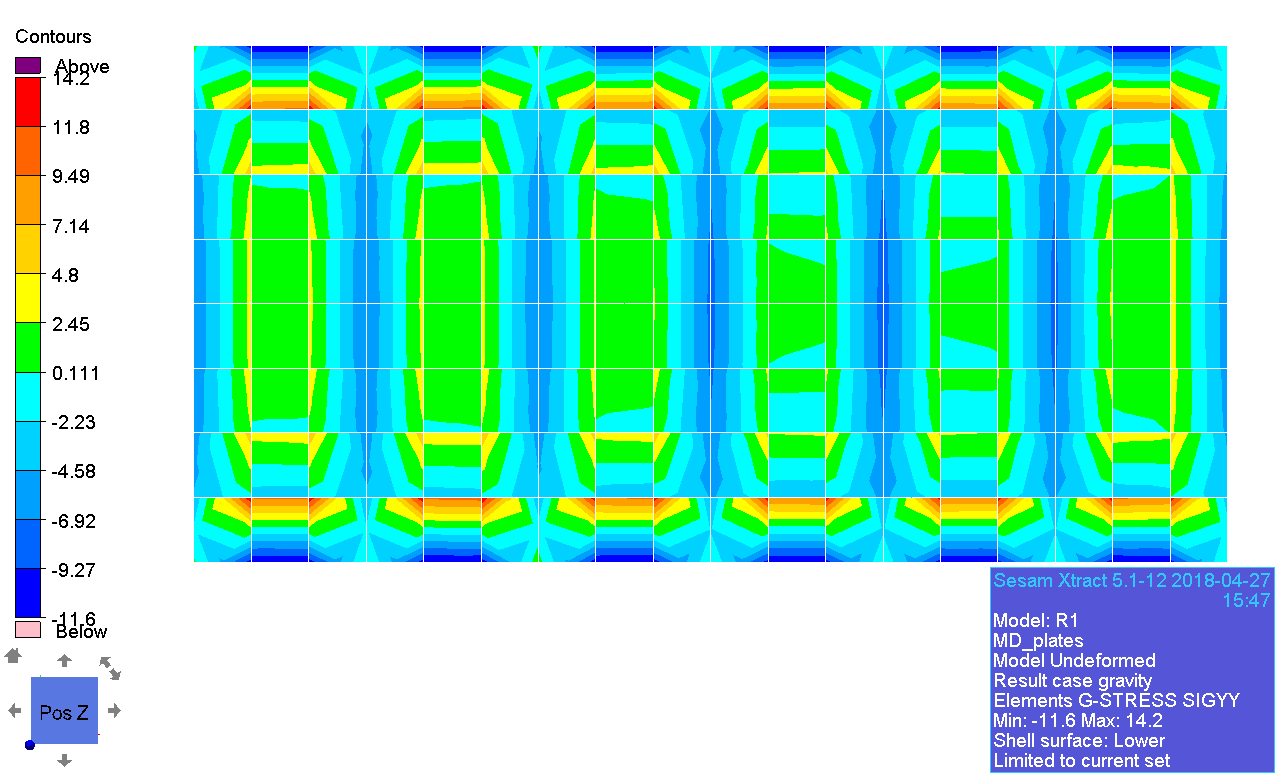


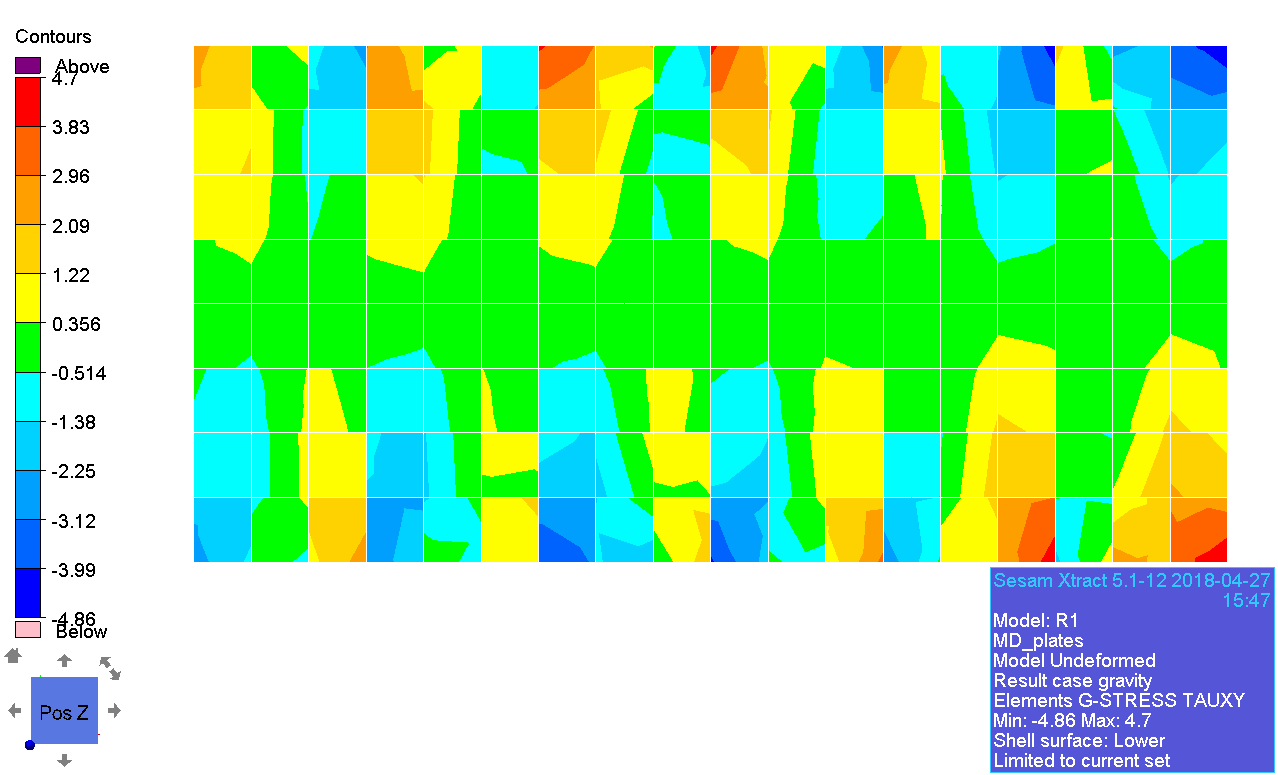


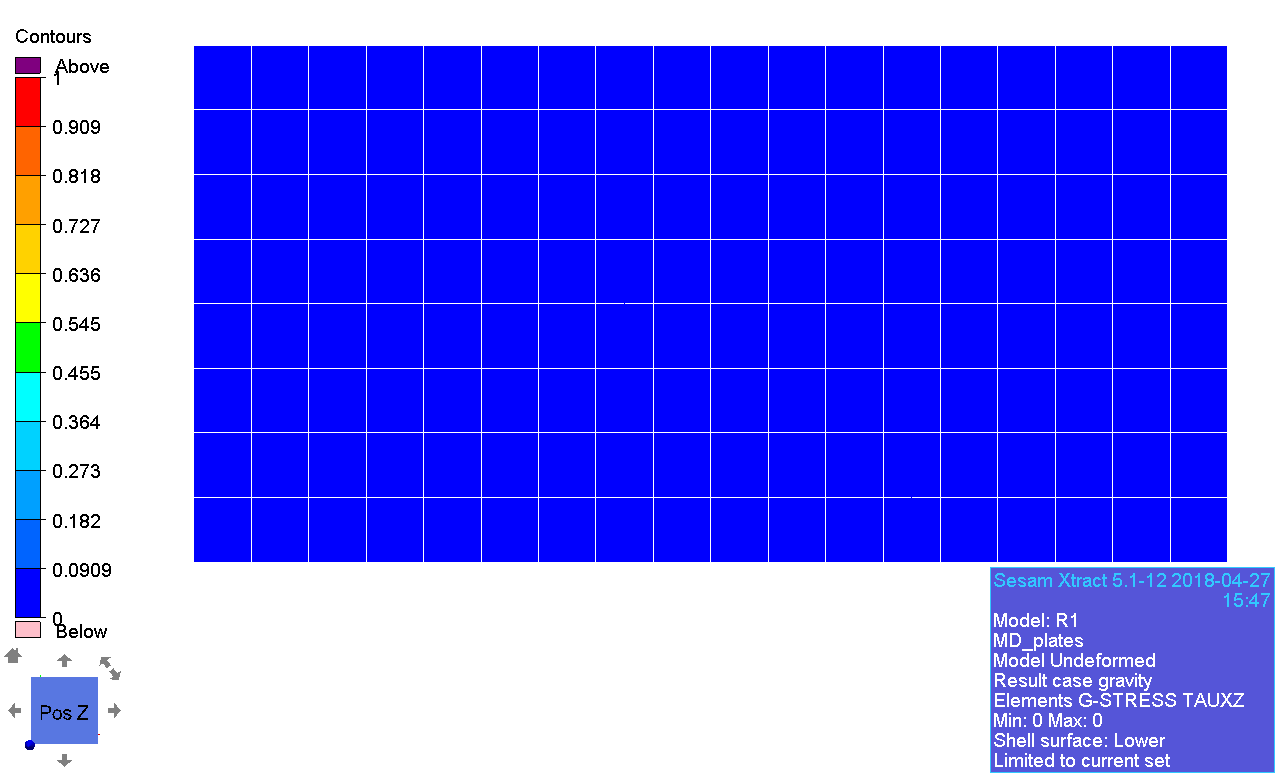


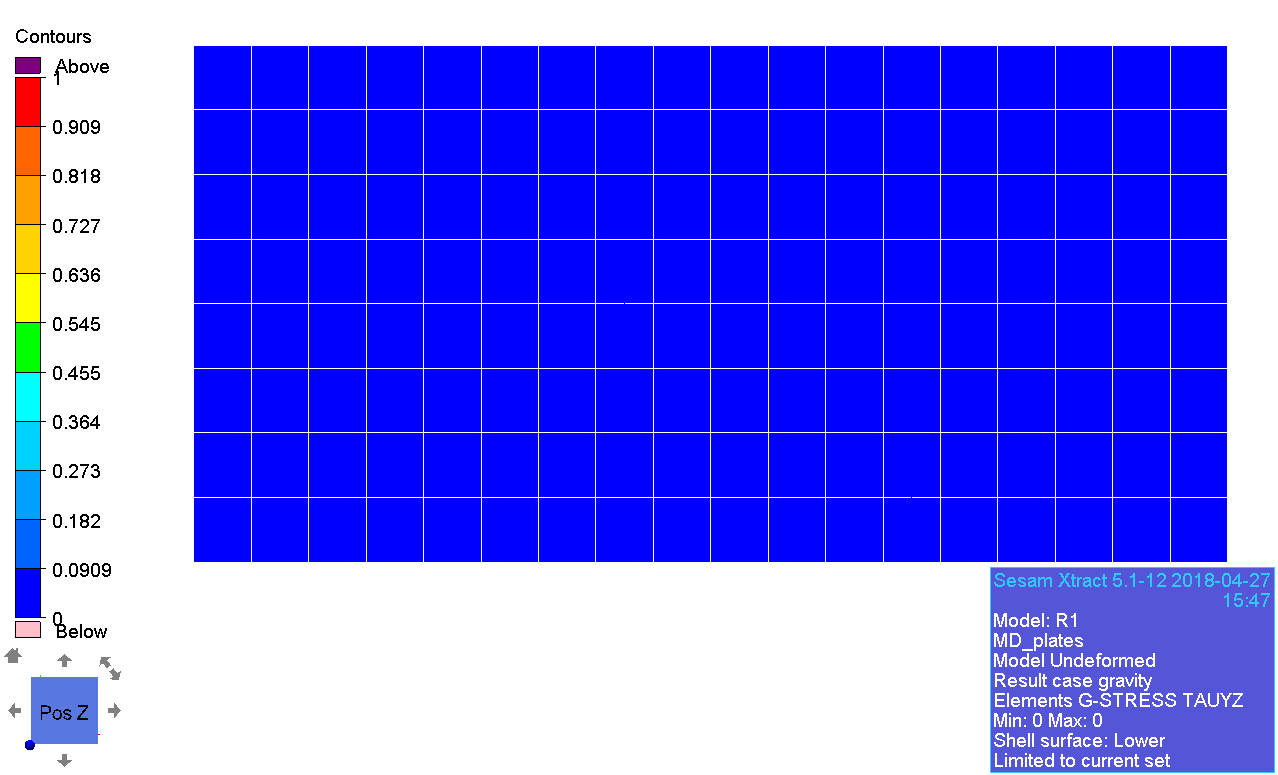


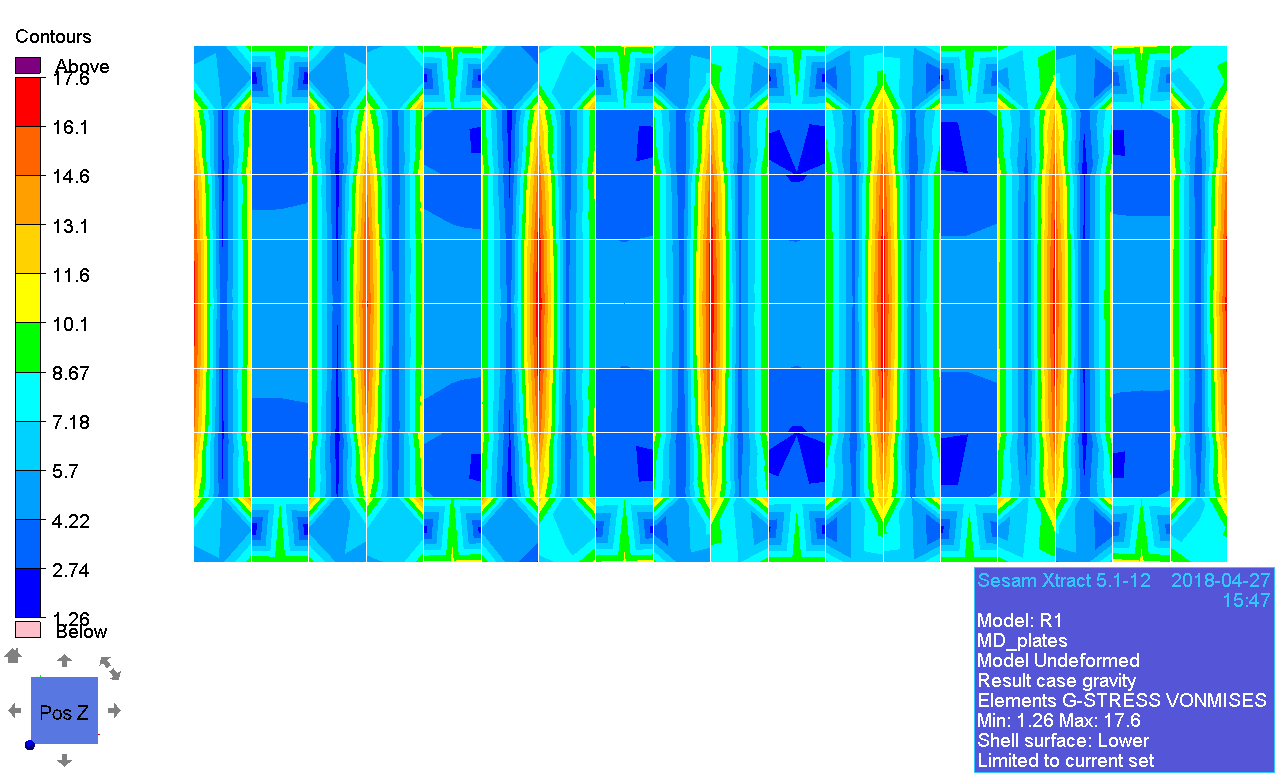




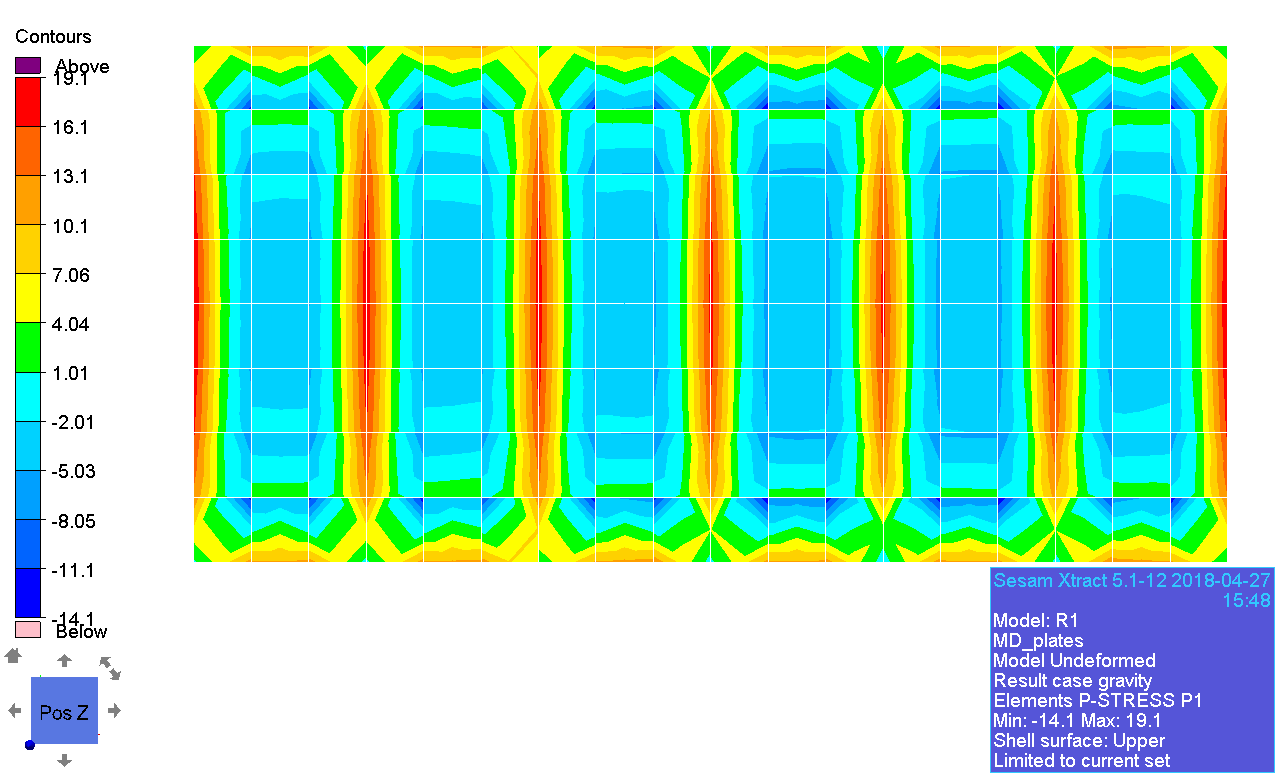


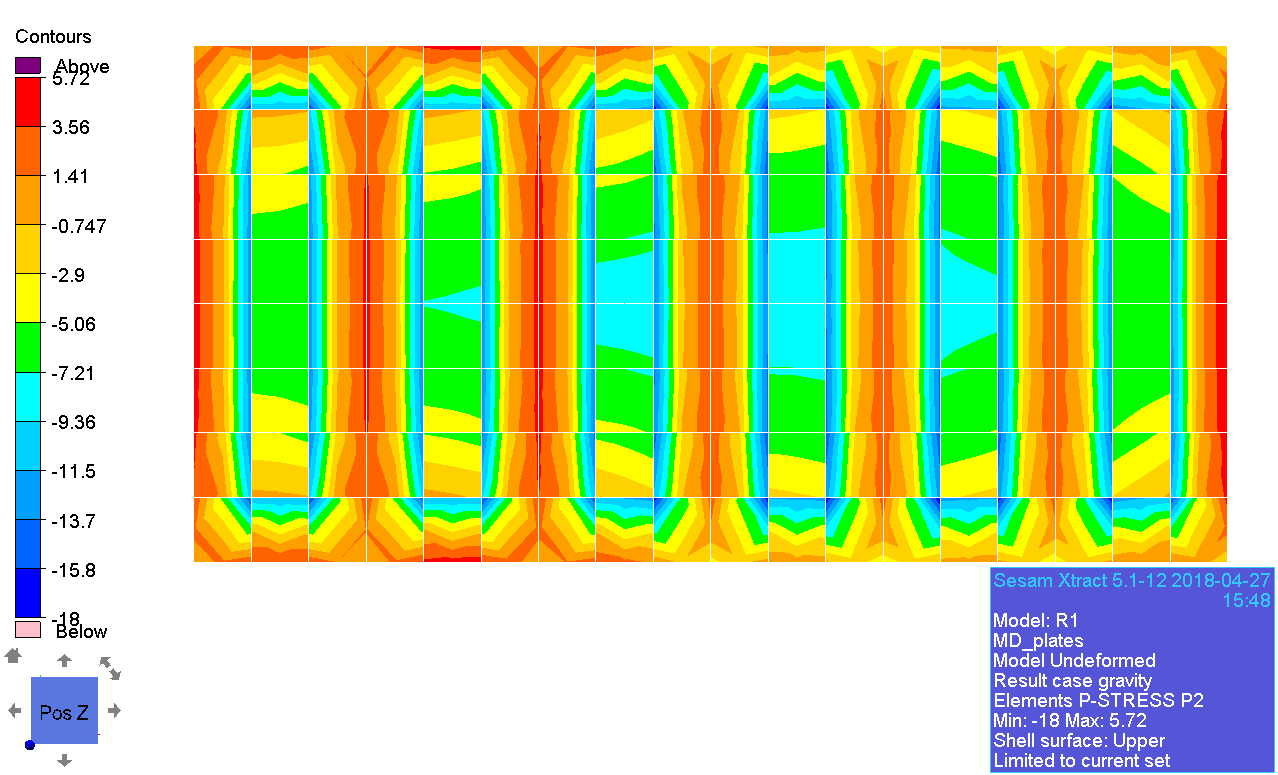


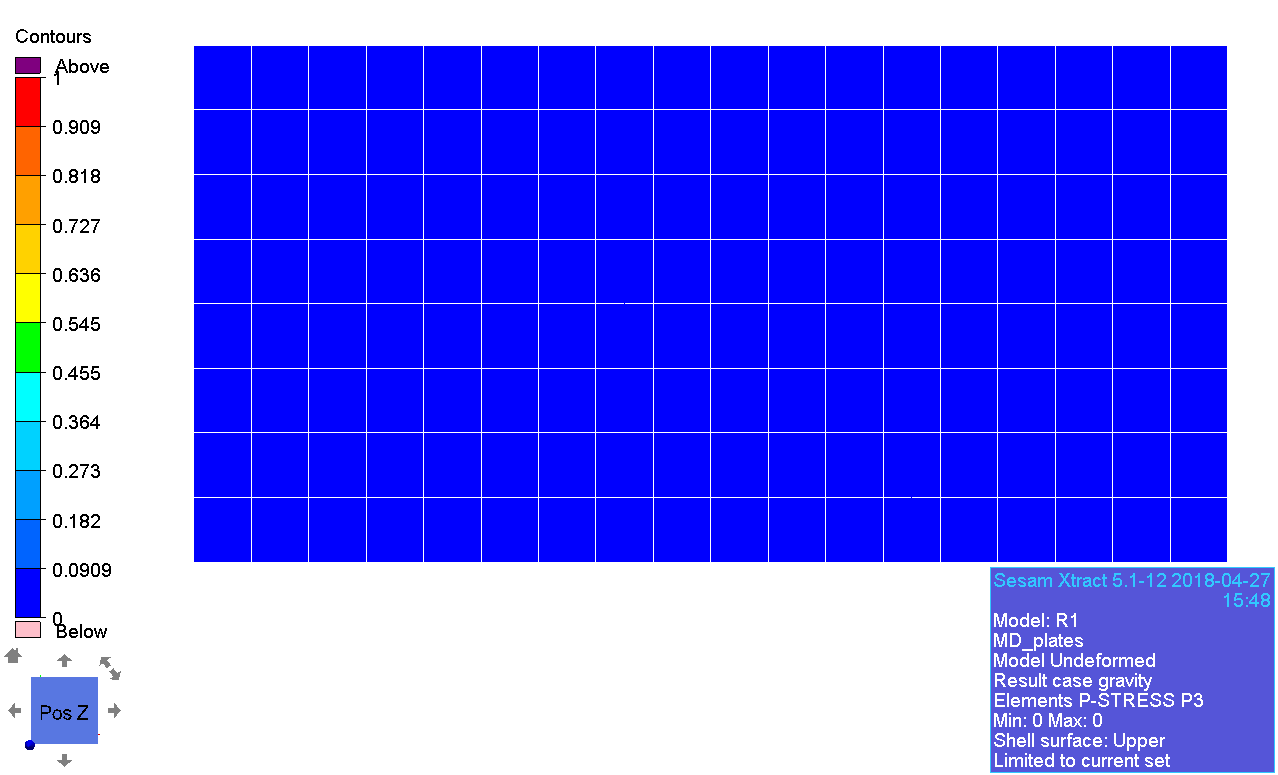


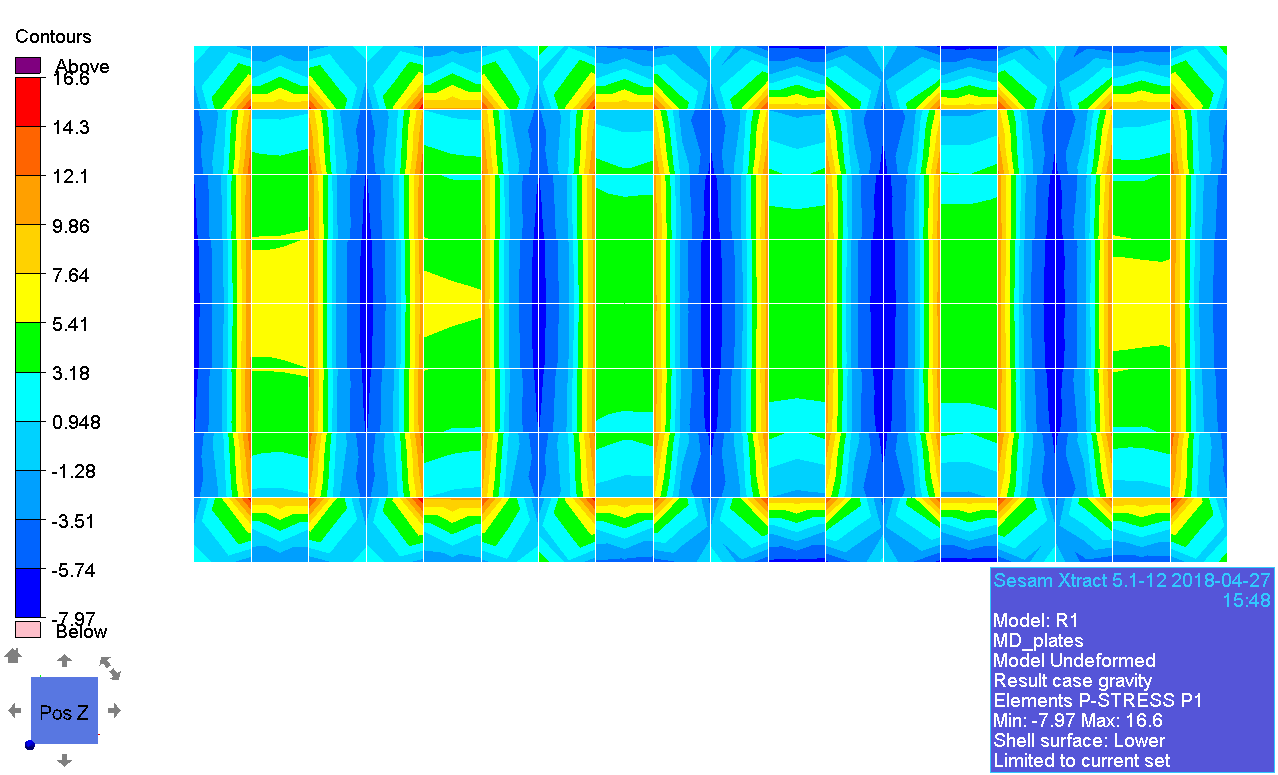


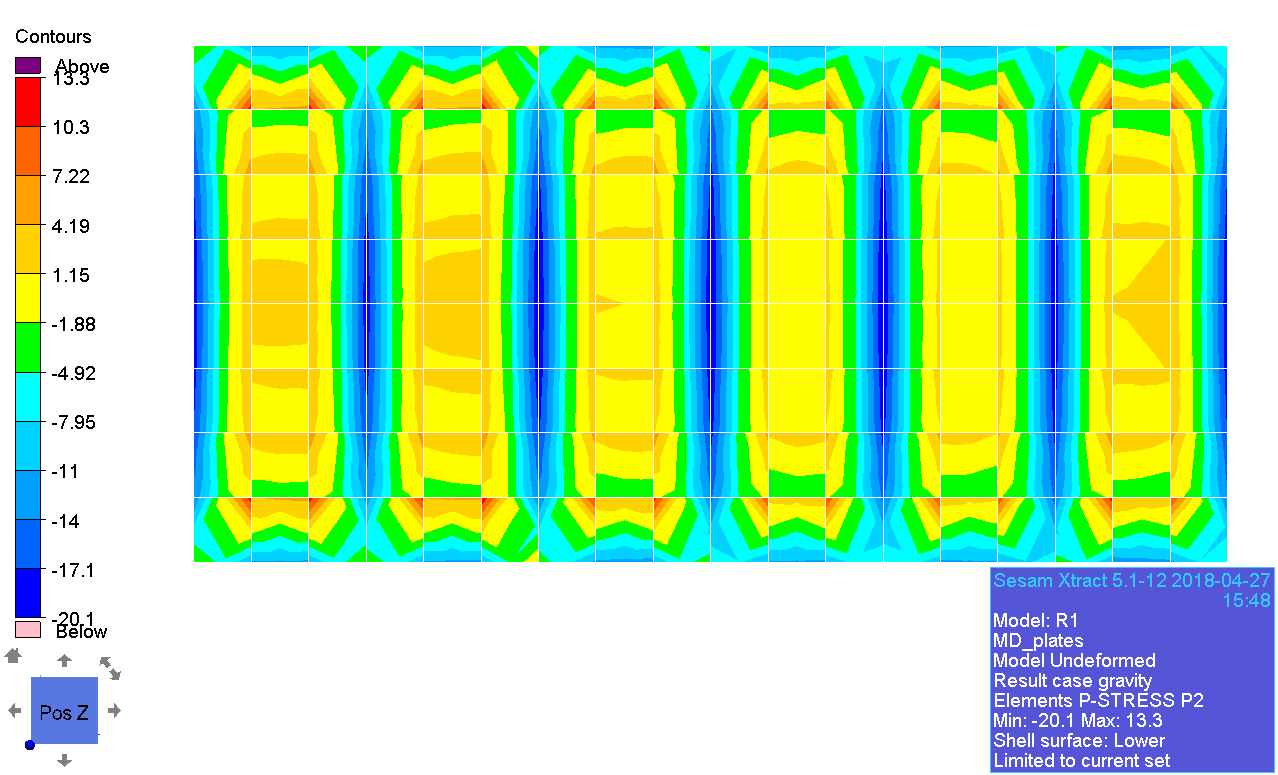
### Principal stress

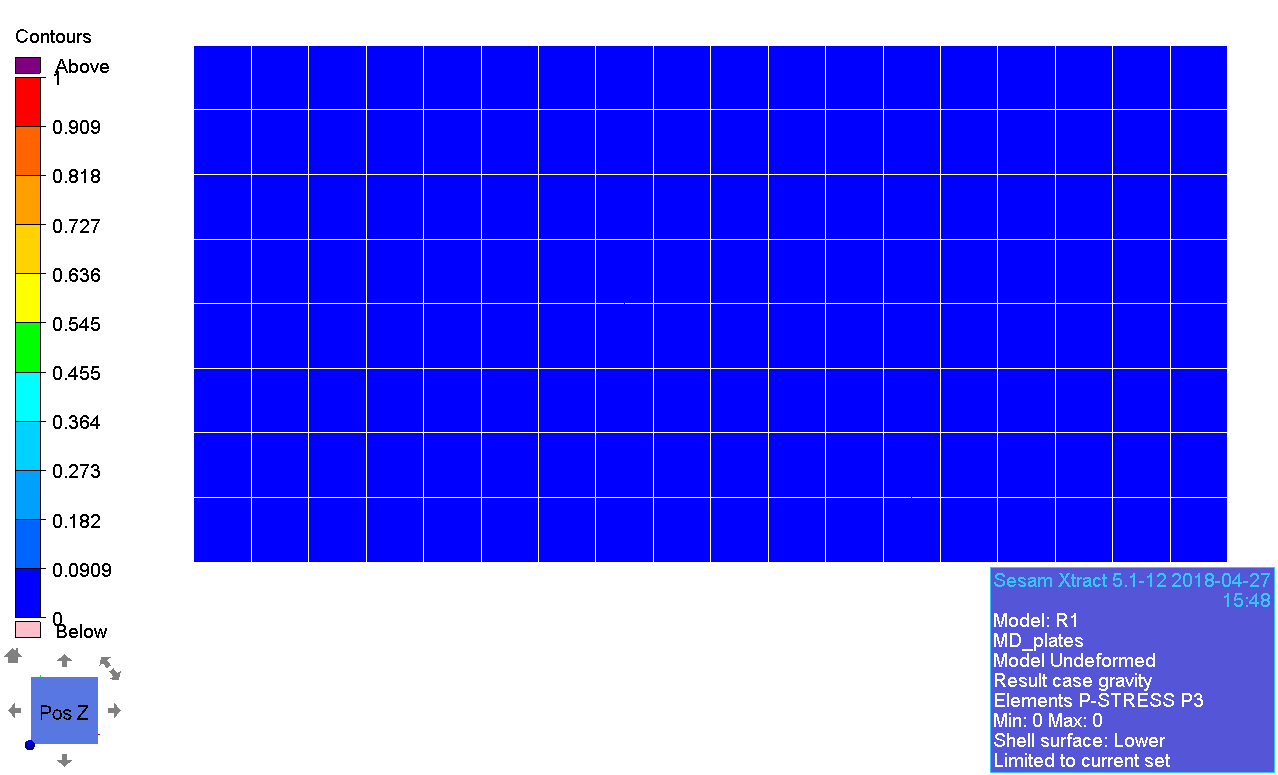




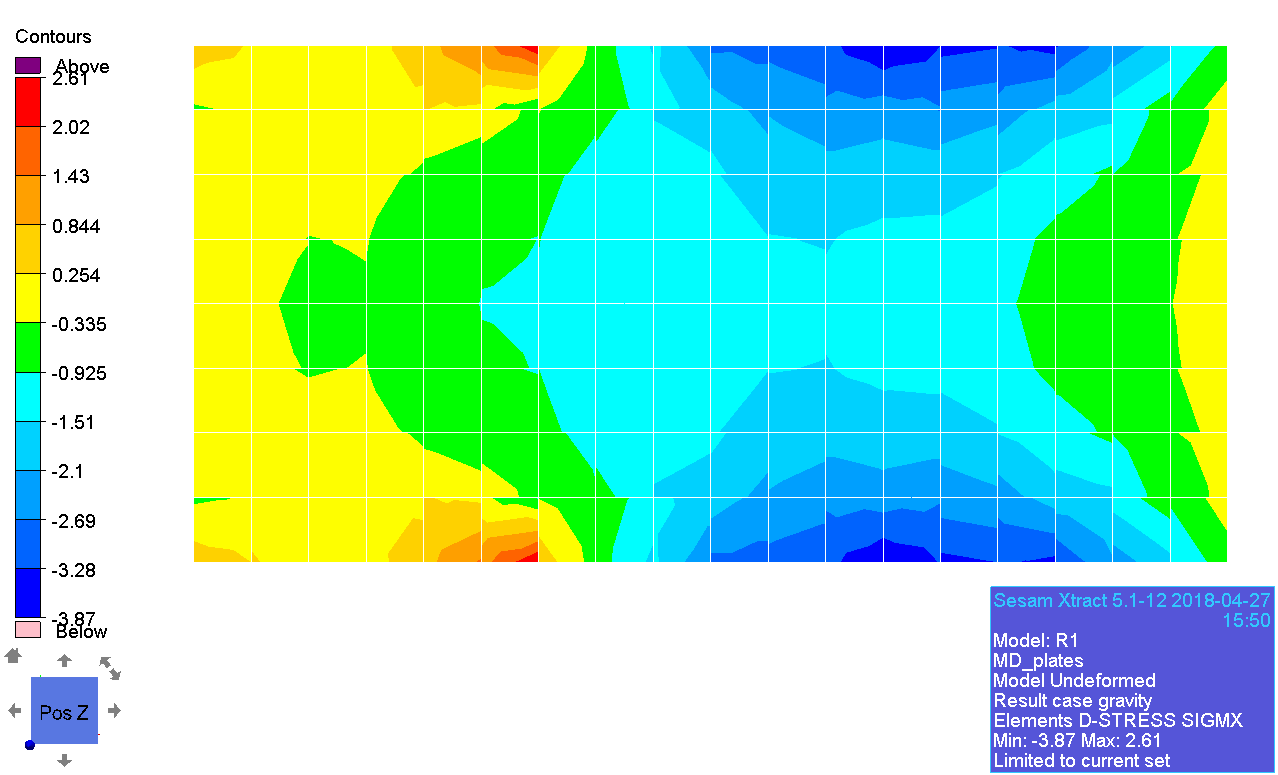


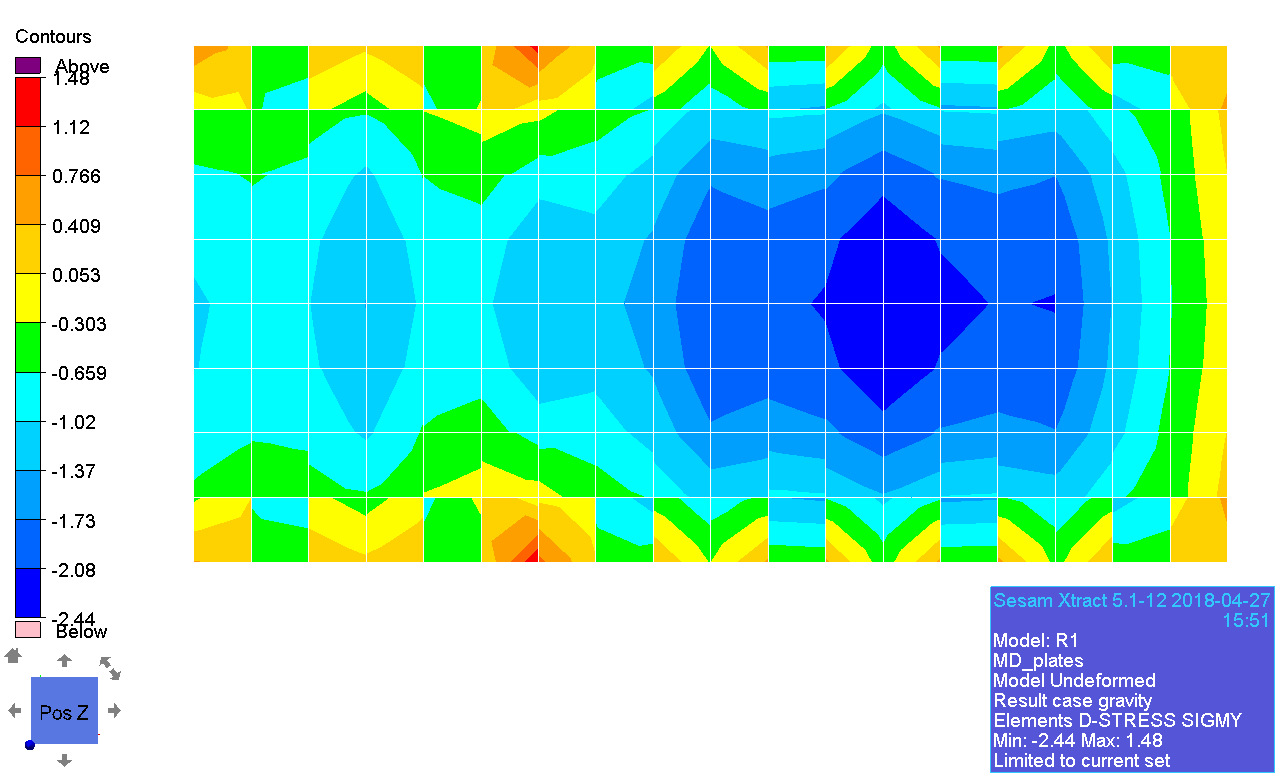


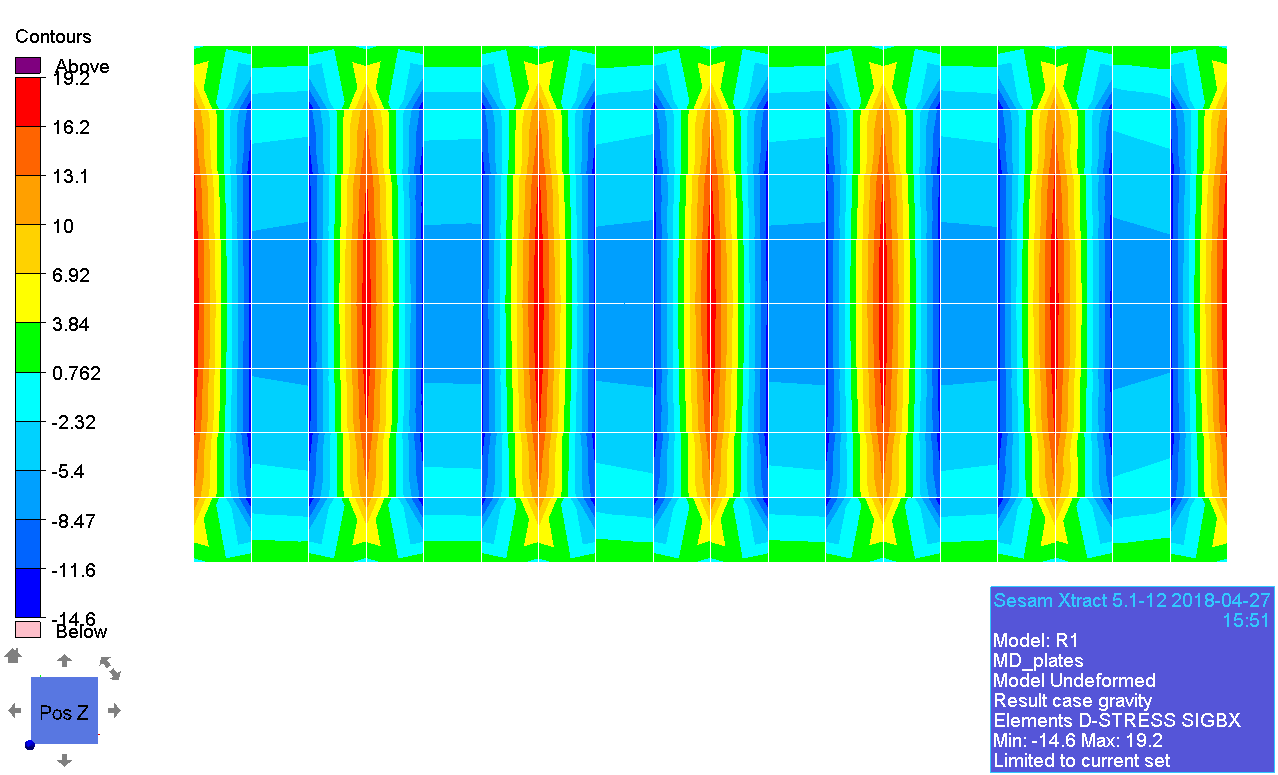


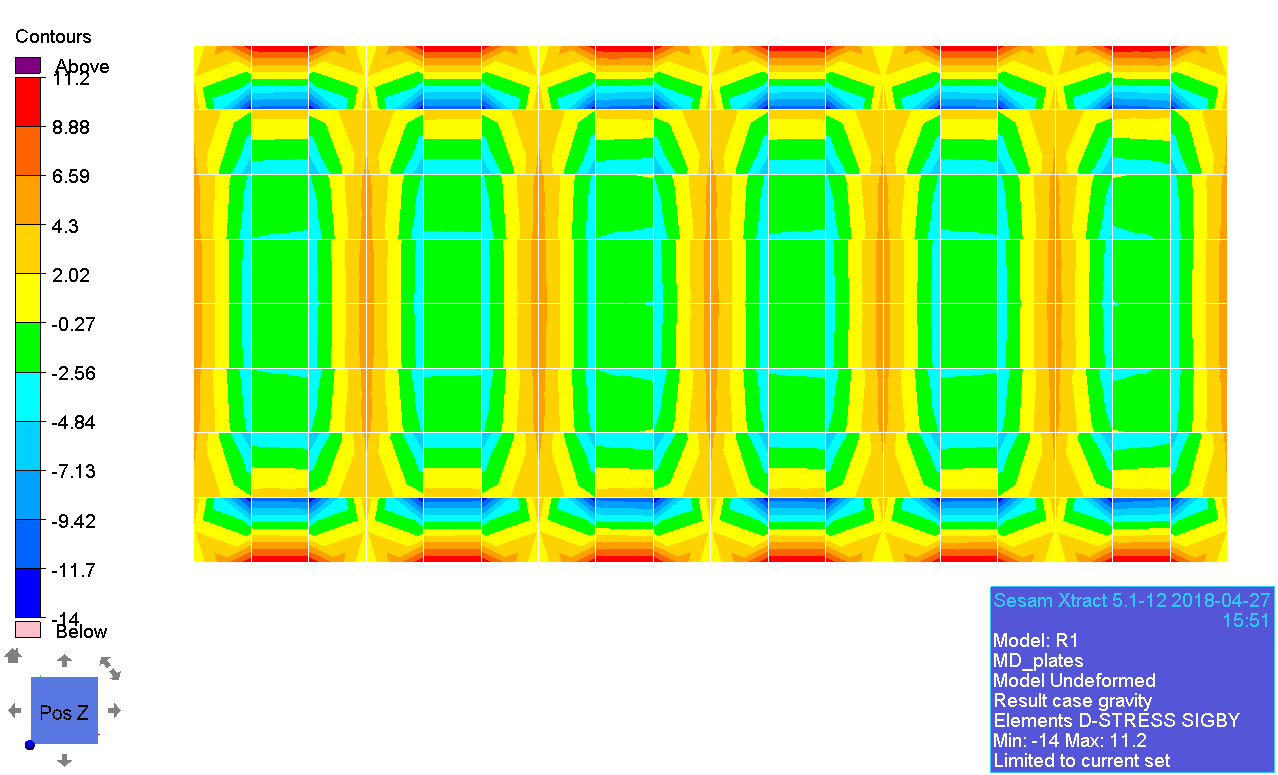


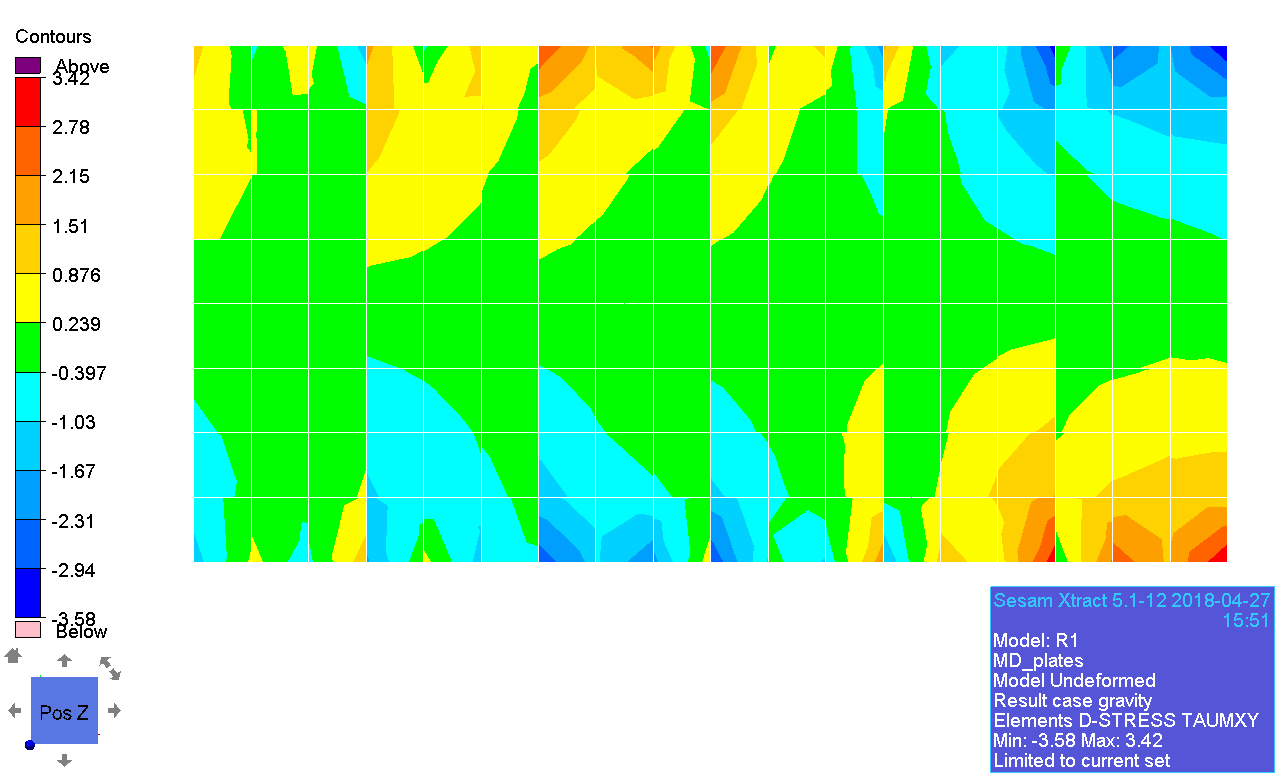
### Decomposed stress

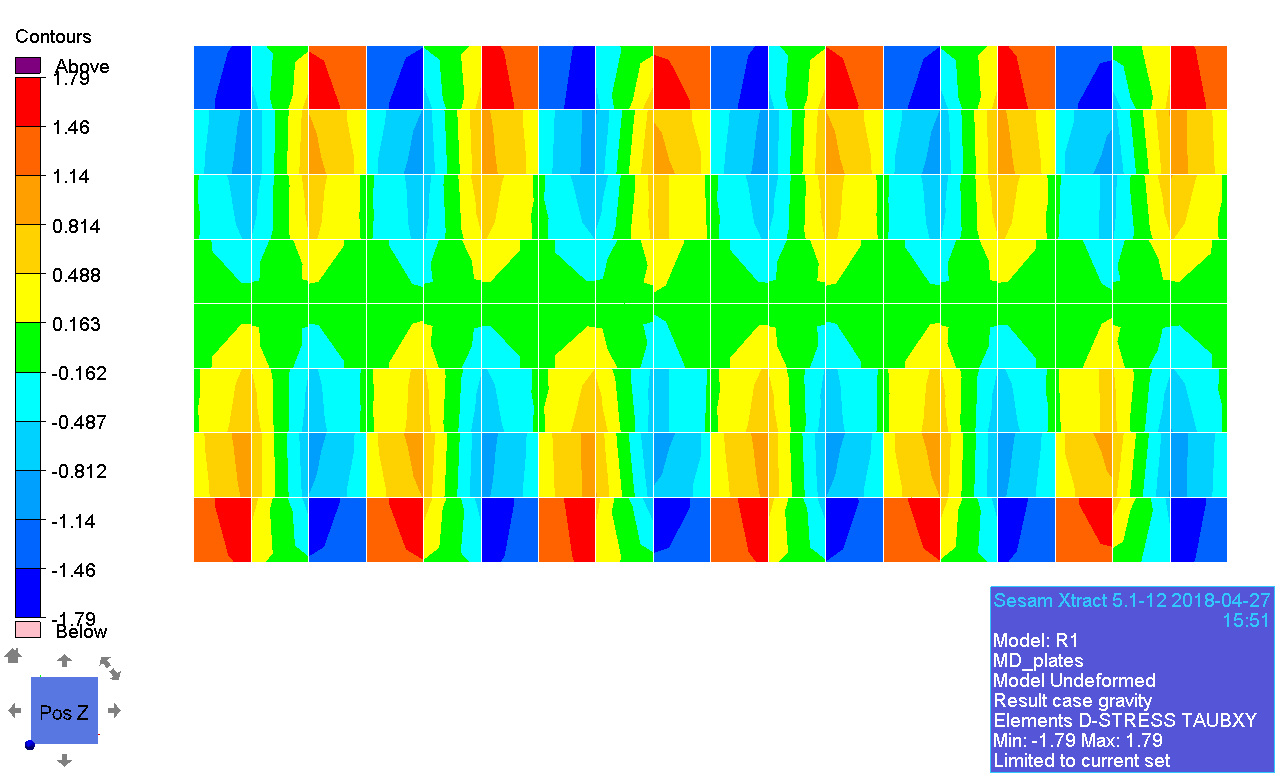


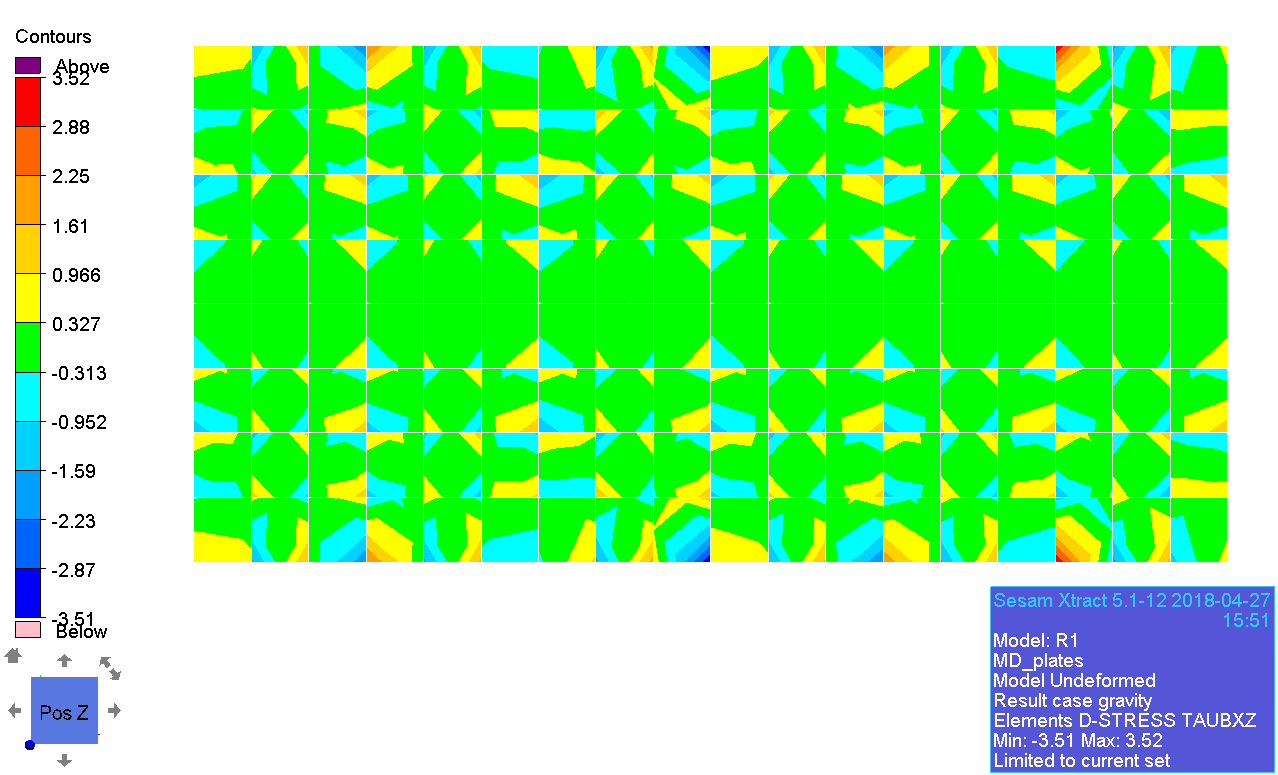


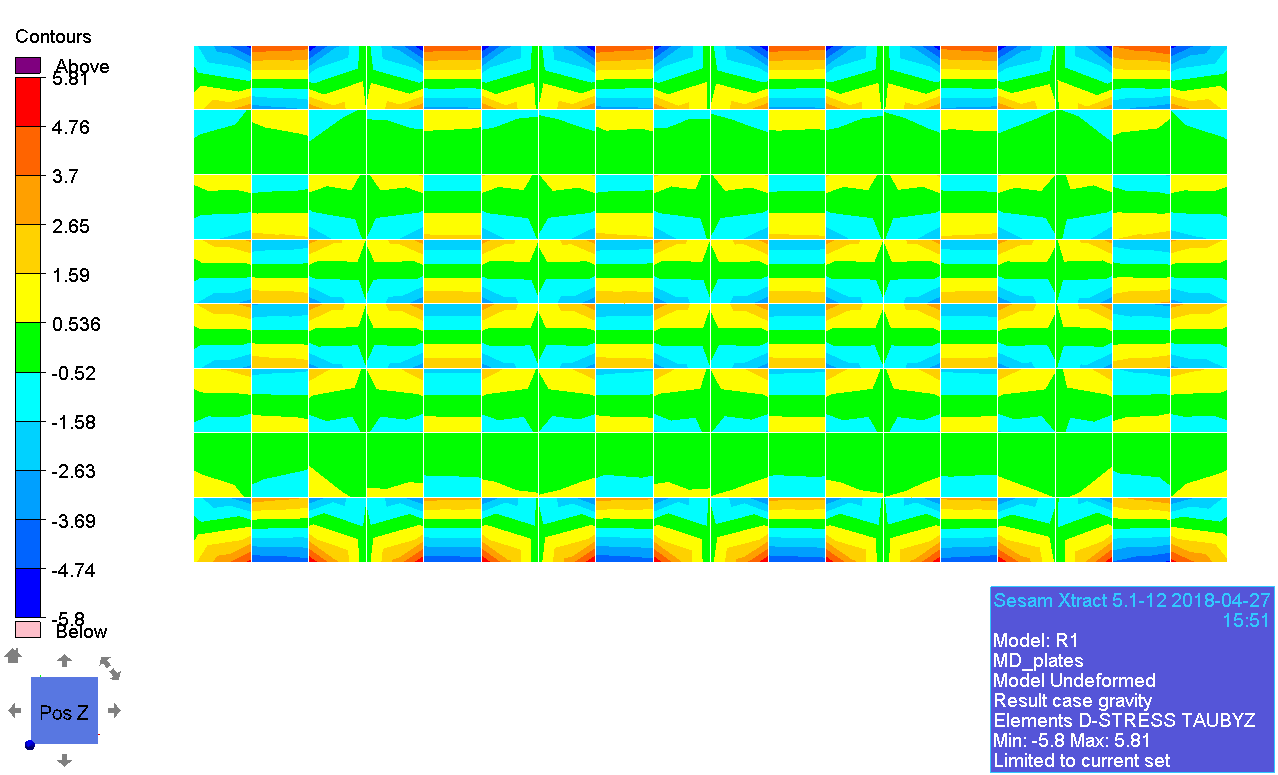


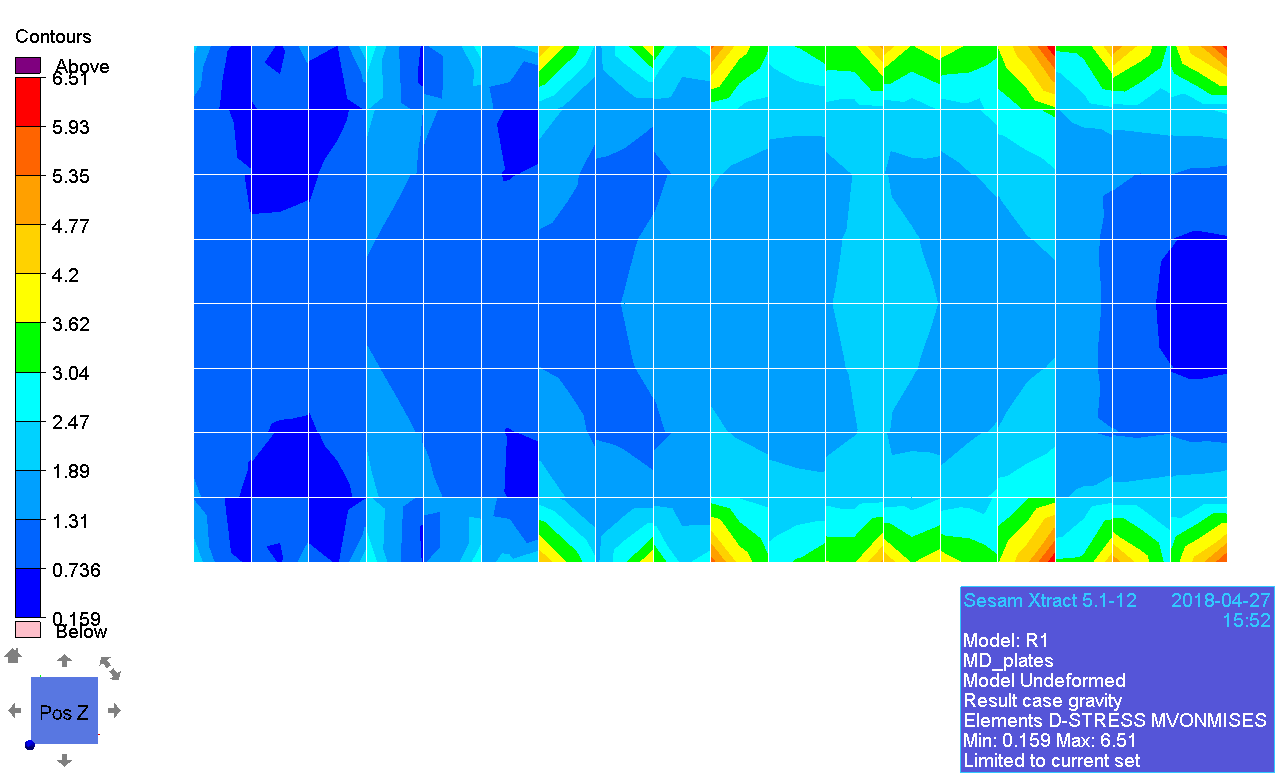




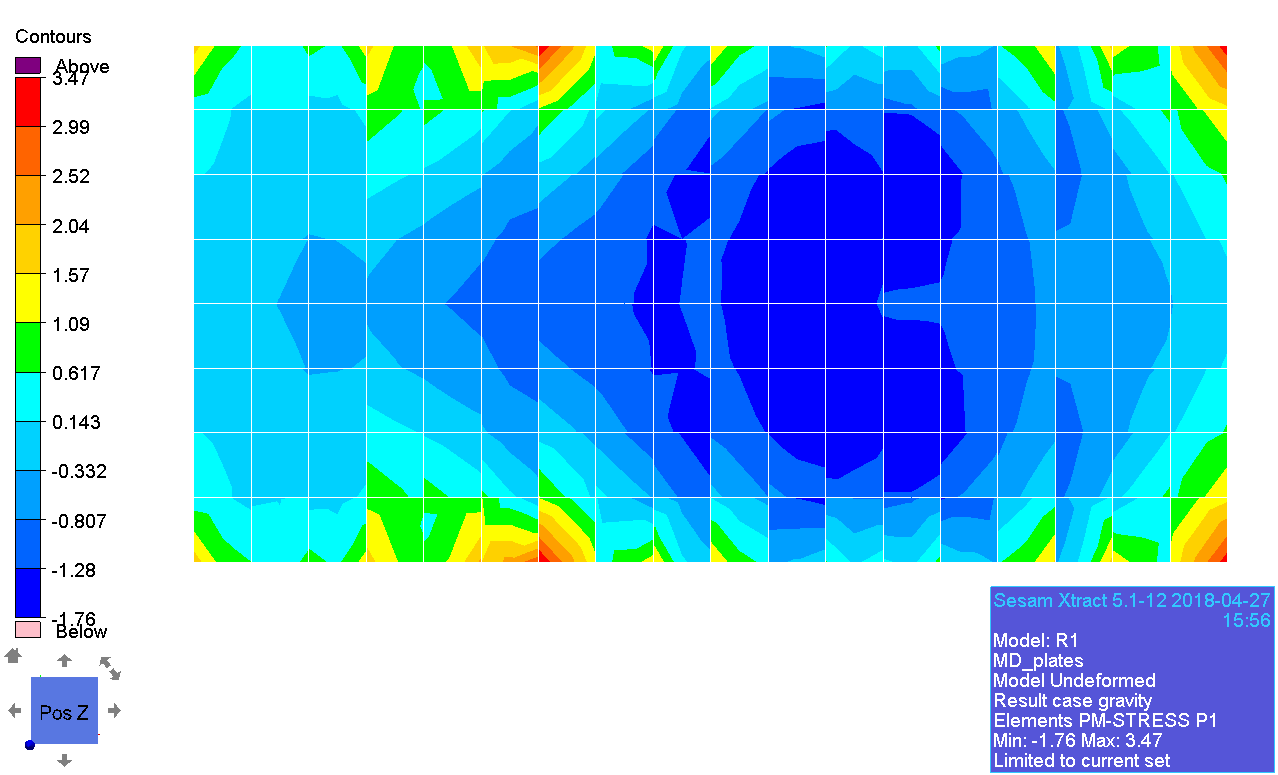


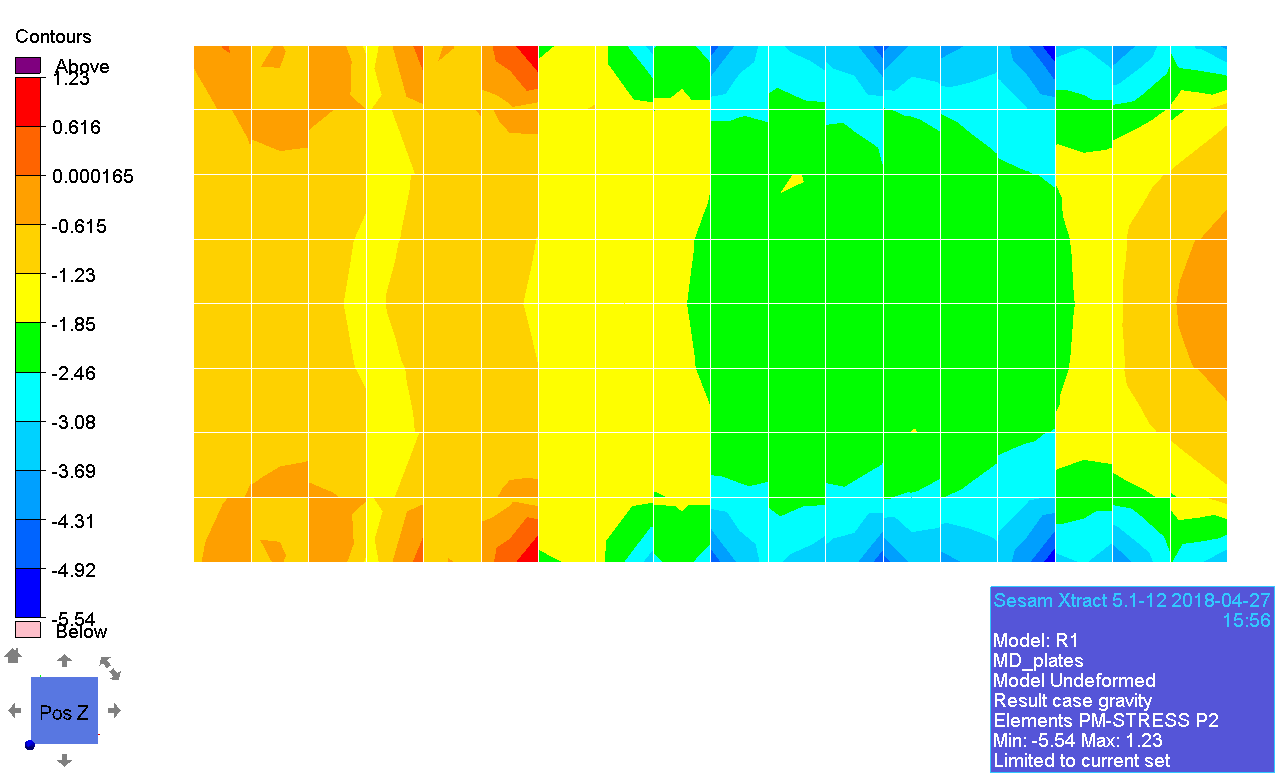




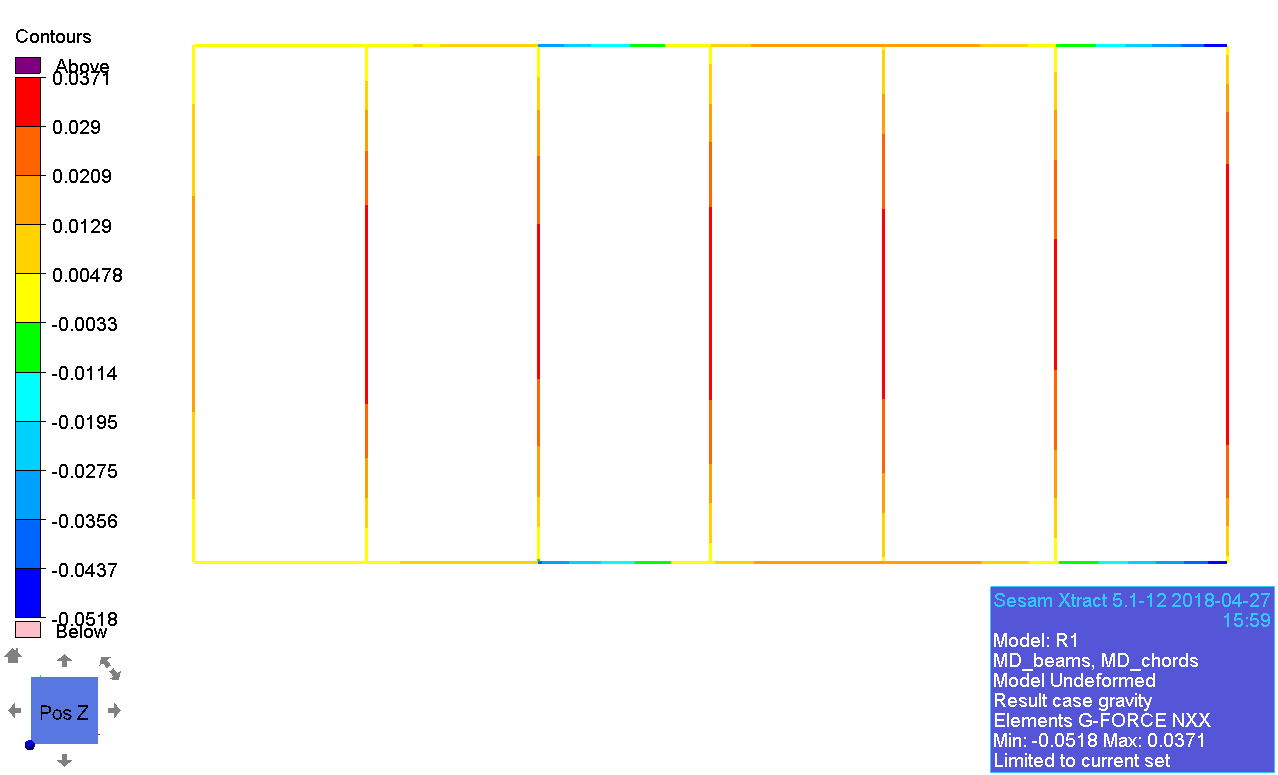


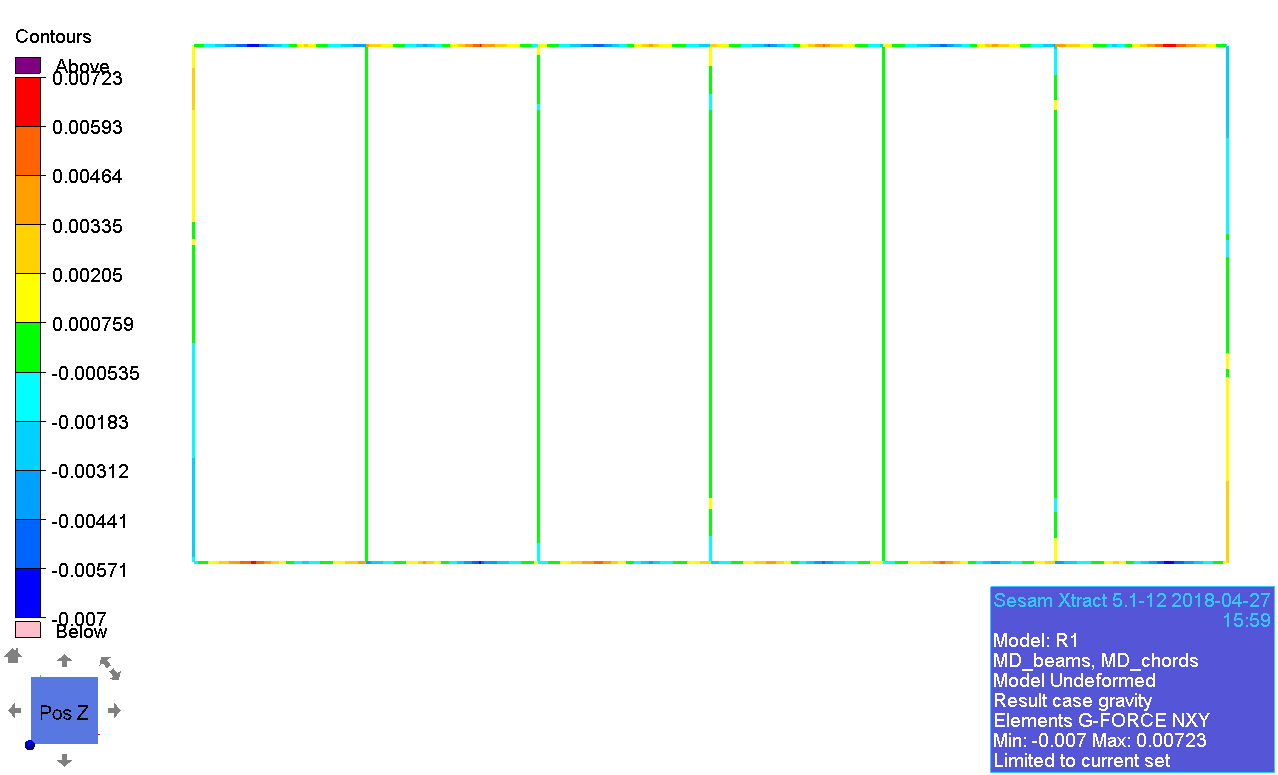
### Membrane principal stress

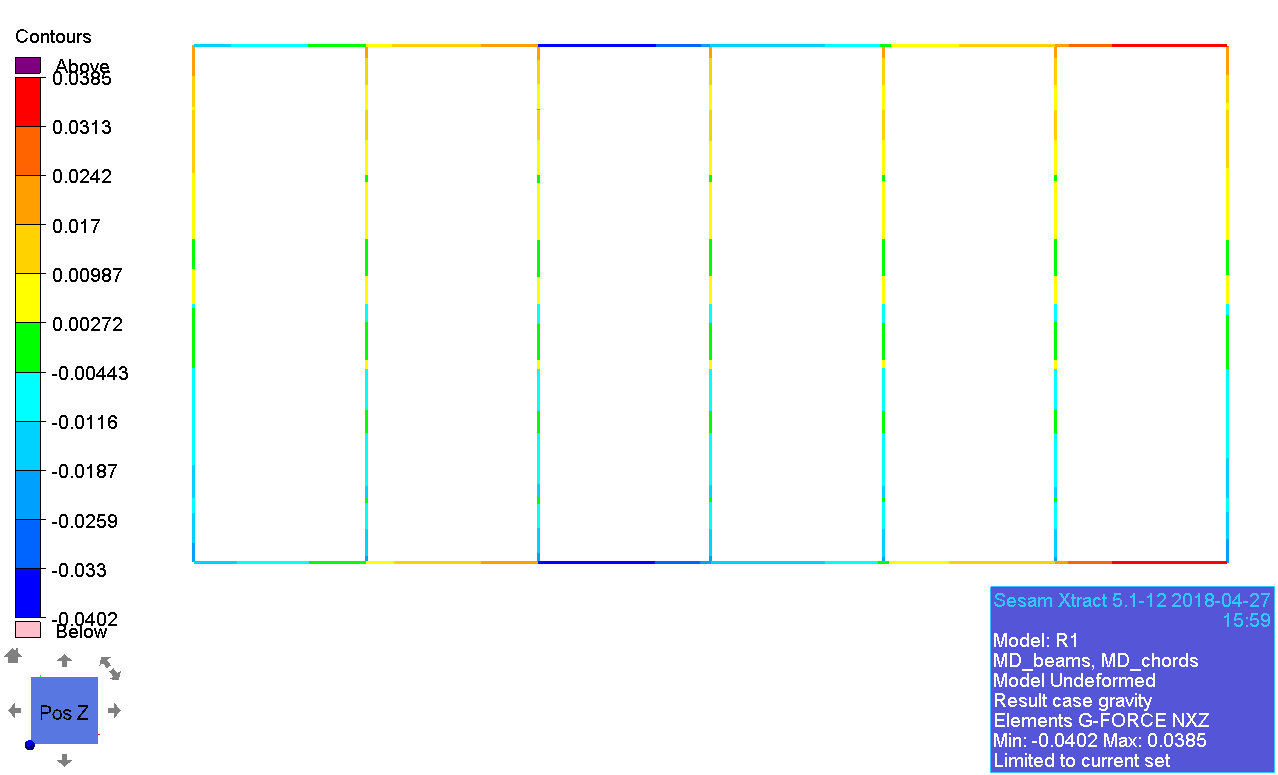


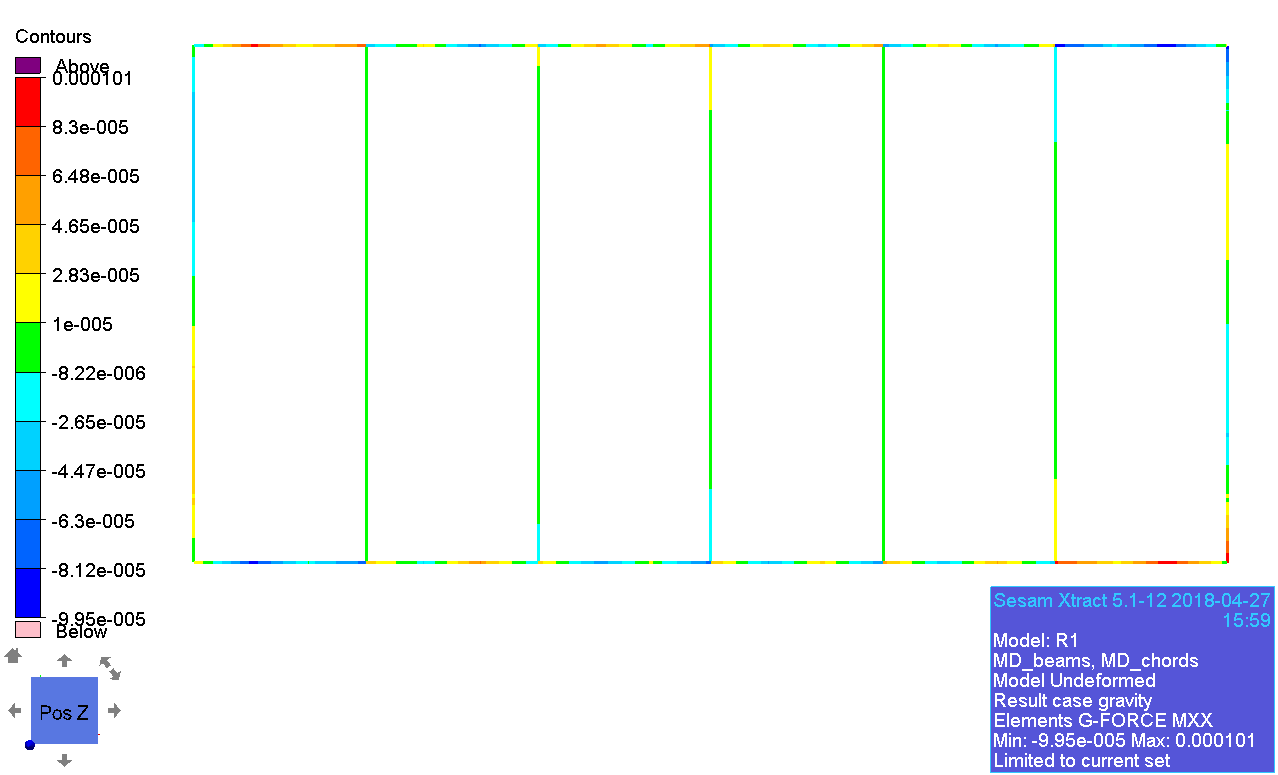


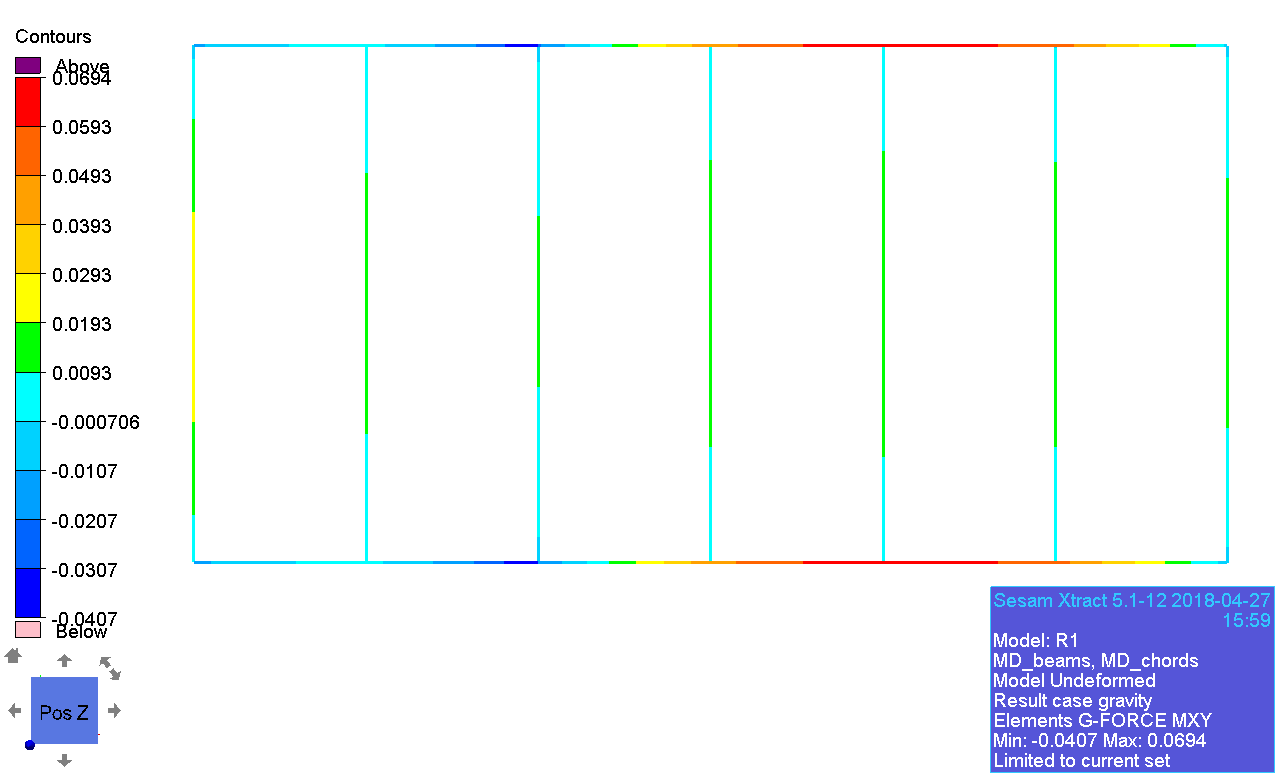
### Beam forces

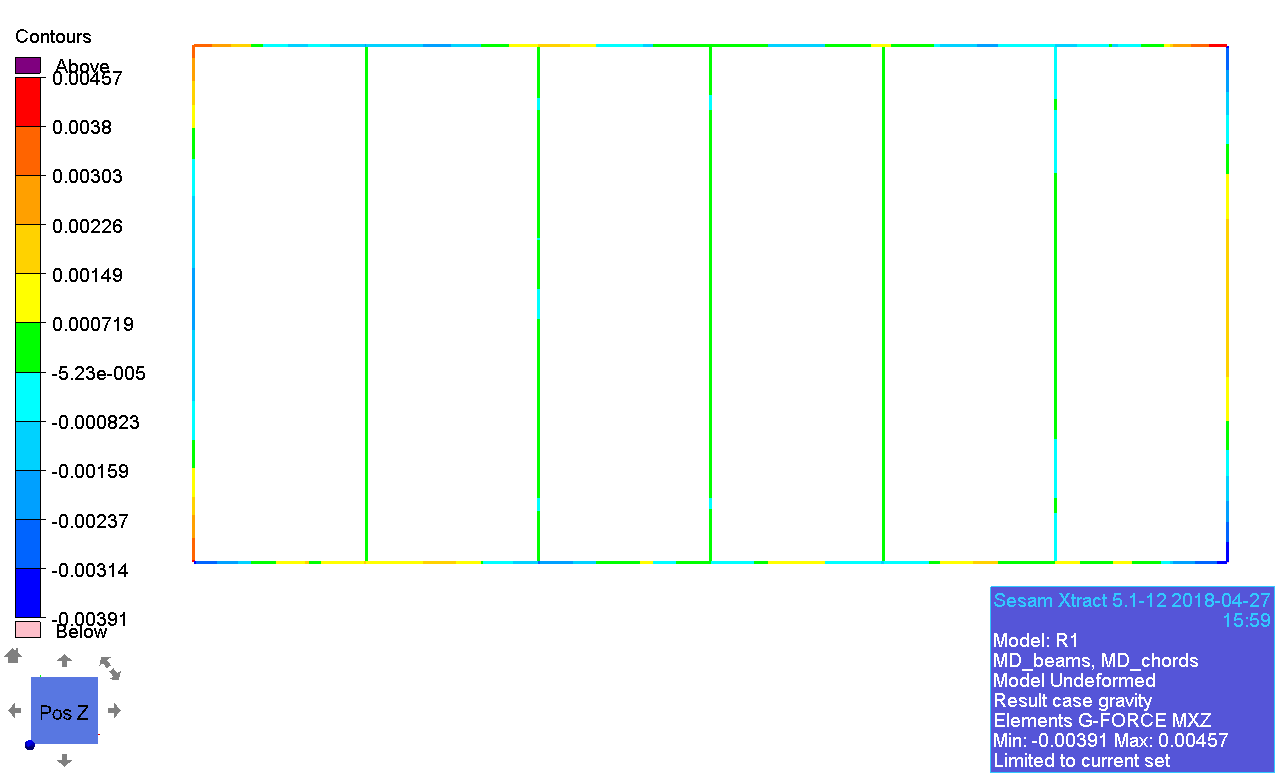












### Displacement

