

# Structural analysis

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# The analysis tasks

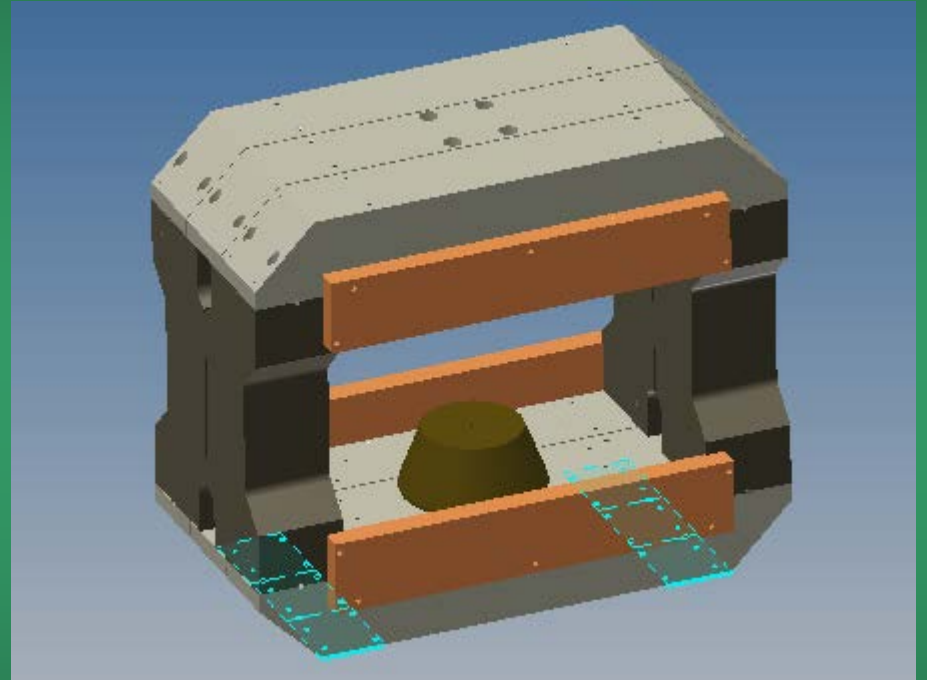
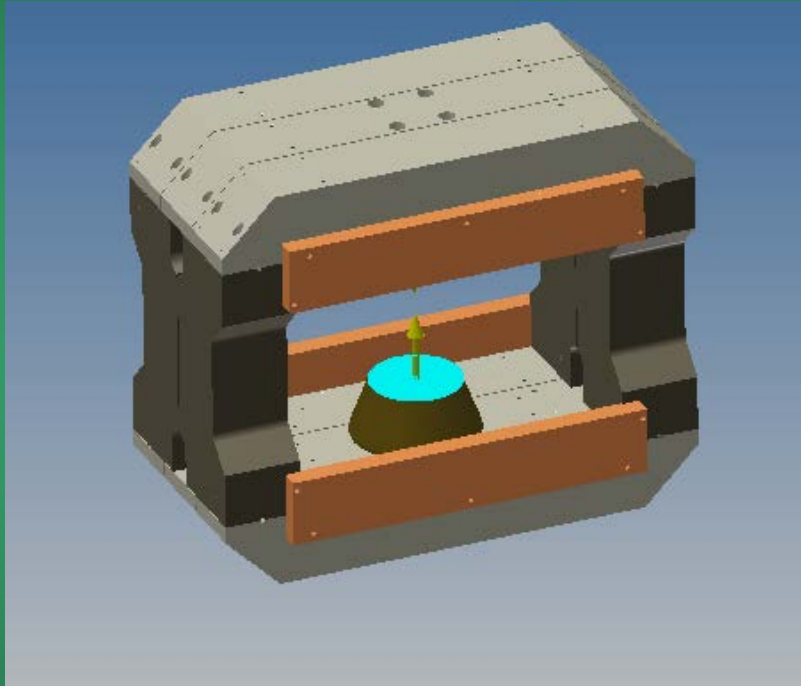
Deformation of the iron yoke after allied force from attracting taper iron parts to the center of the magnet,

Influence of buckling atmosphere pressure on the vacuum case of the coil;

Results of internal pressure up to 20 bar at room temperature inside the coils stainless steel case;

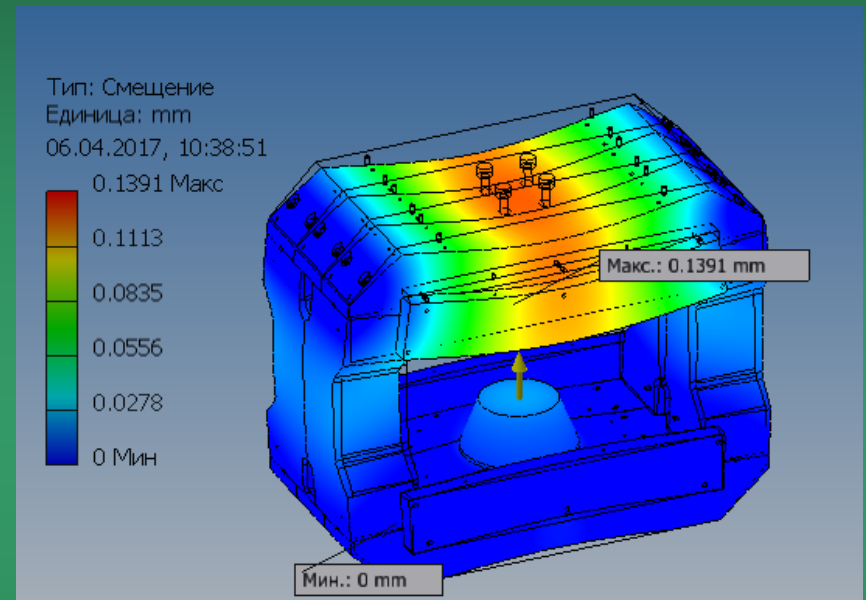
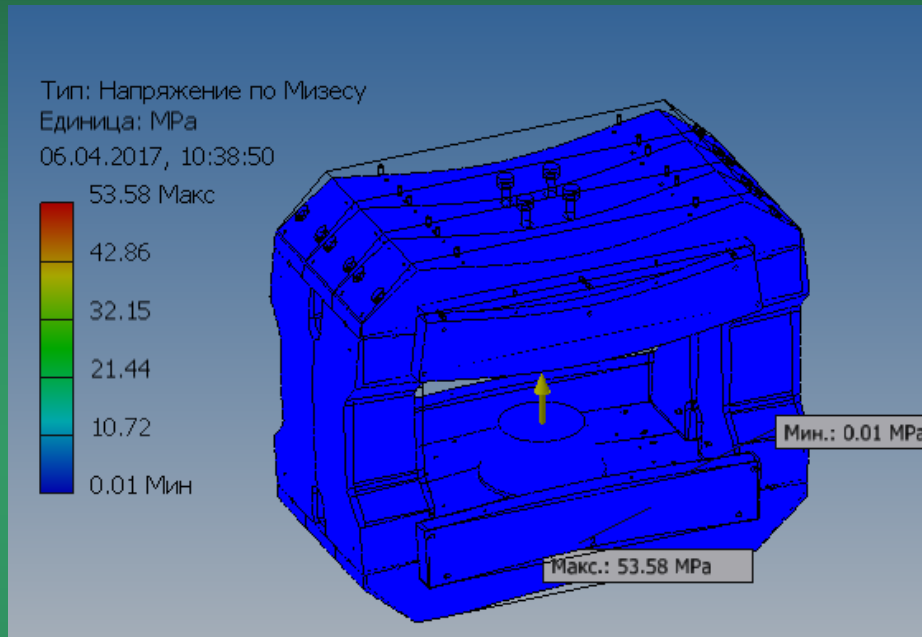
Results of compressive force on the support struts

# Deformation of the iron yoke



The force from the taper iron (pole)  $\sim 2.8$  MN (280 tonnes).

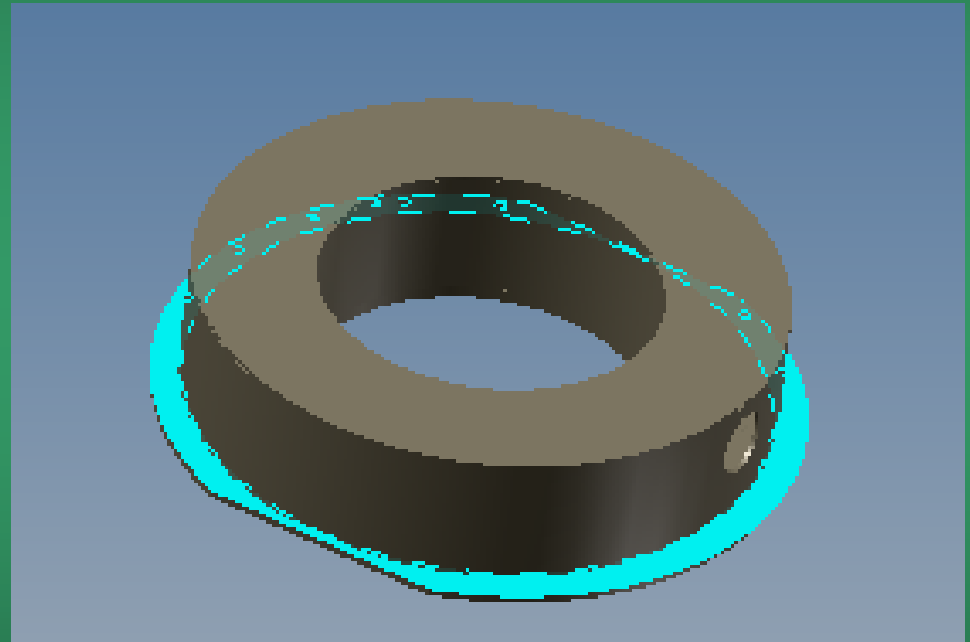
# Deformation of the iron yoke



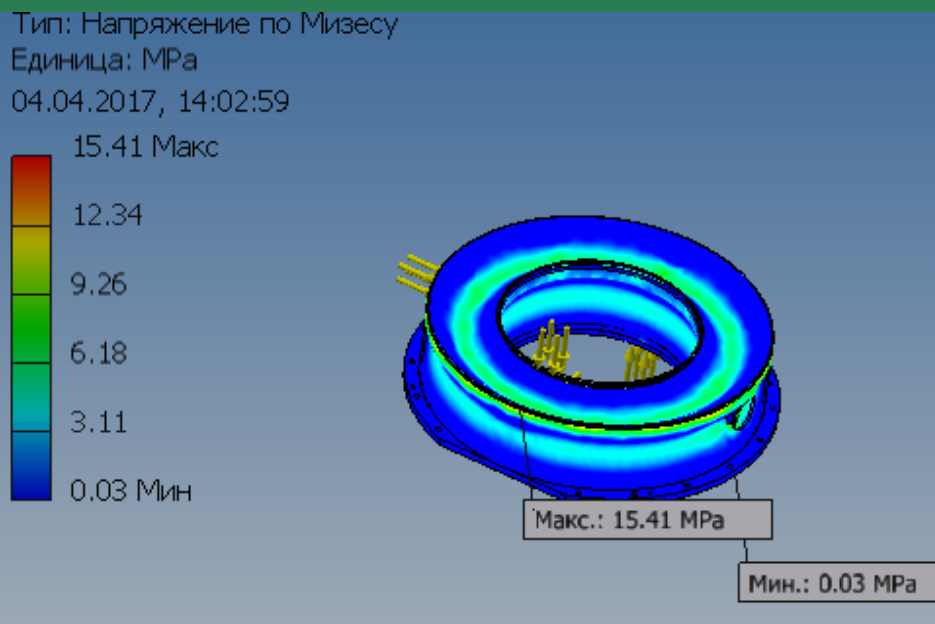
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# Buckling atmosphere pressure on the vacuum case

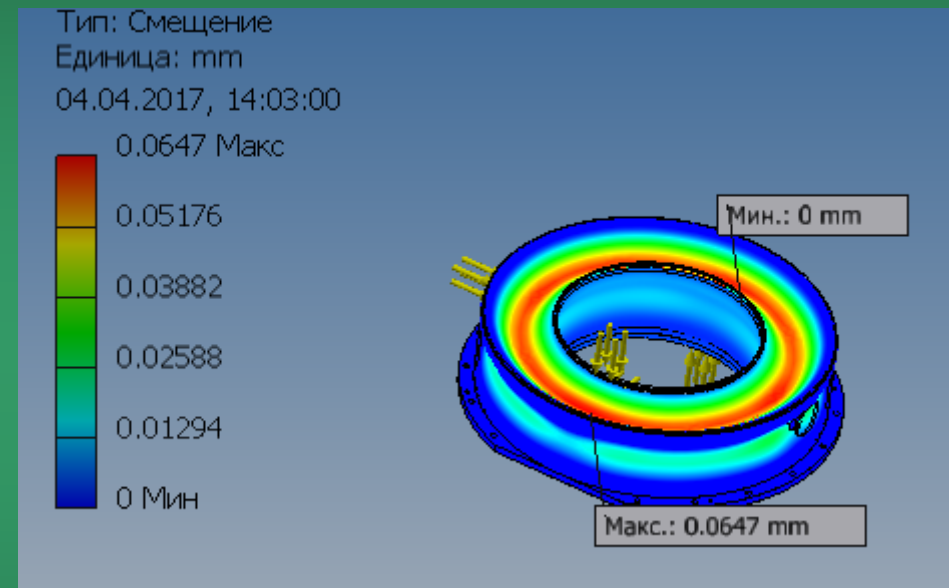
Stainless steel parameters	
Density	8.03g/cm <sup>3</sup>
Yield strength	228 MPa
Ultimate strength	540 MPa
Young modulus	190.3 GPa
Poisson coefficient	0.305 6p
Shear modulus	72.9119 GPa



# Buckling atmosphere pressure on the vacuum case



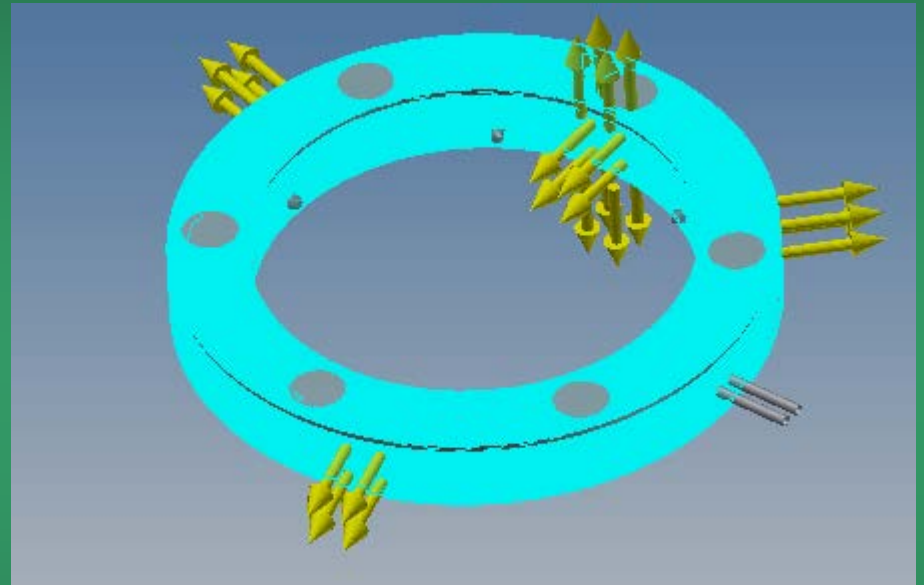
von Mises stress



displacement

# Internal P up to 20 bar inside the coils stainless steel case

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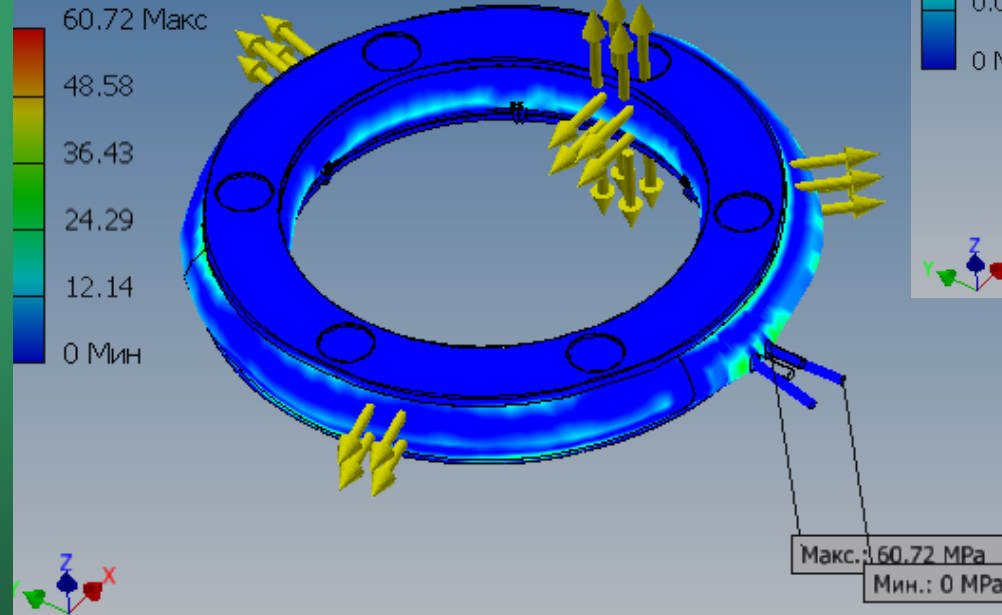


Inner pressure

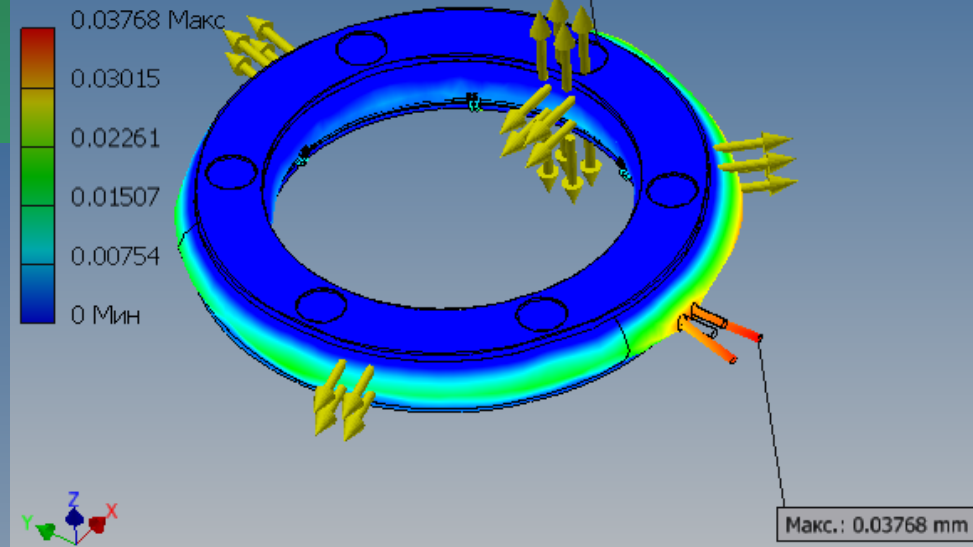
# Internal P up to 20 bar inside the coils stainless steel case

von Mises stress

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Единица: МПа  
04.04.2017, 15:24:01



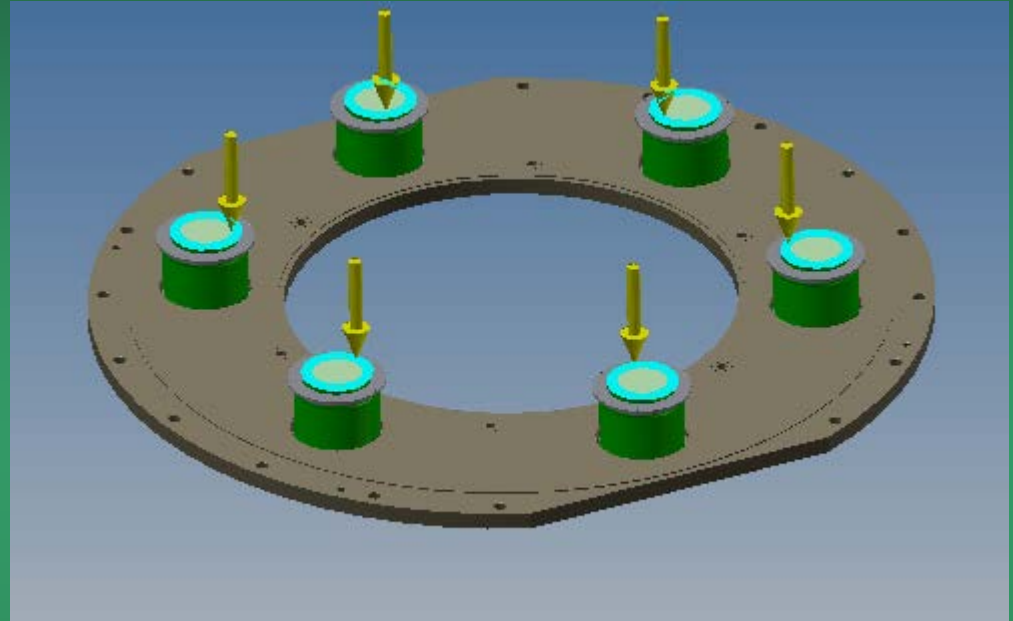
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displacement

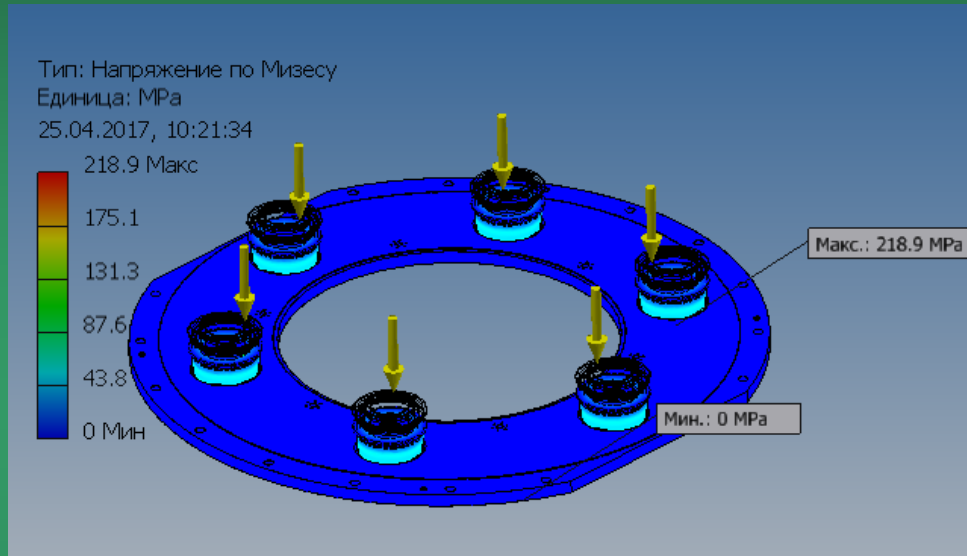


# Compressive force on the support struts

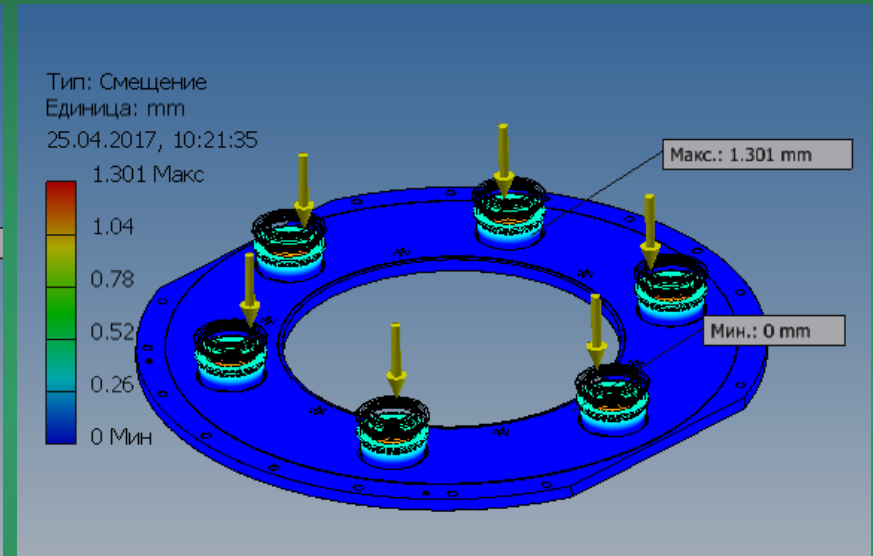


Model, Applied force of 3 MN

# Compressive force on the support struts



von Mises stress



displacement