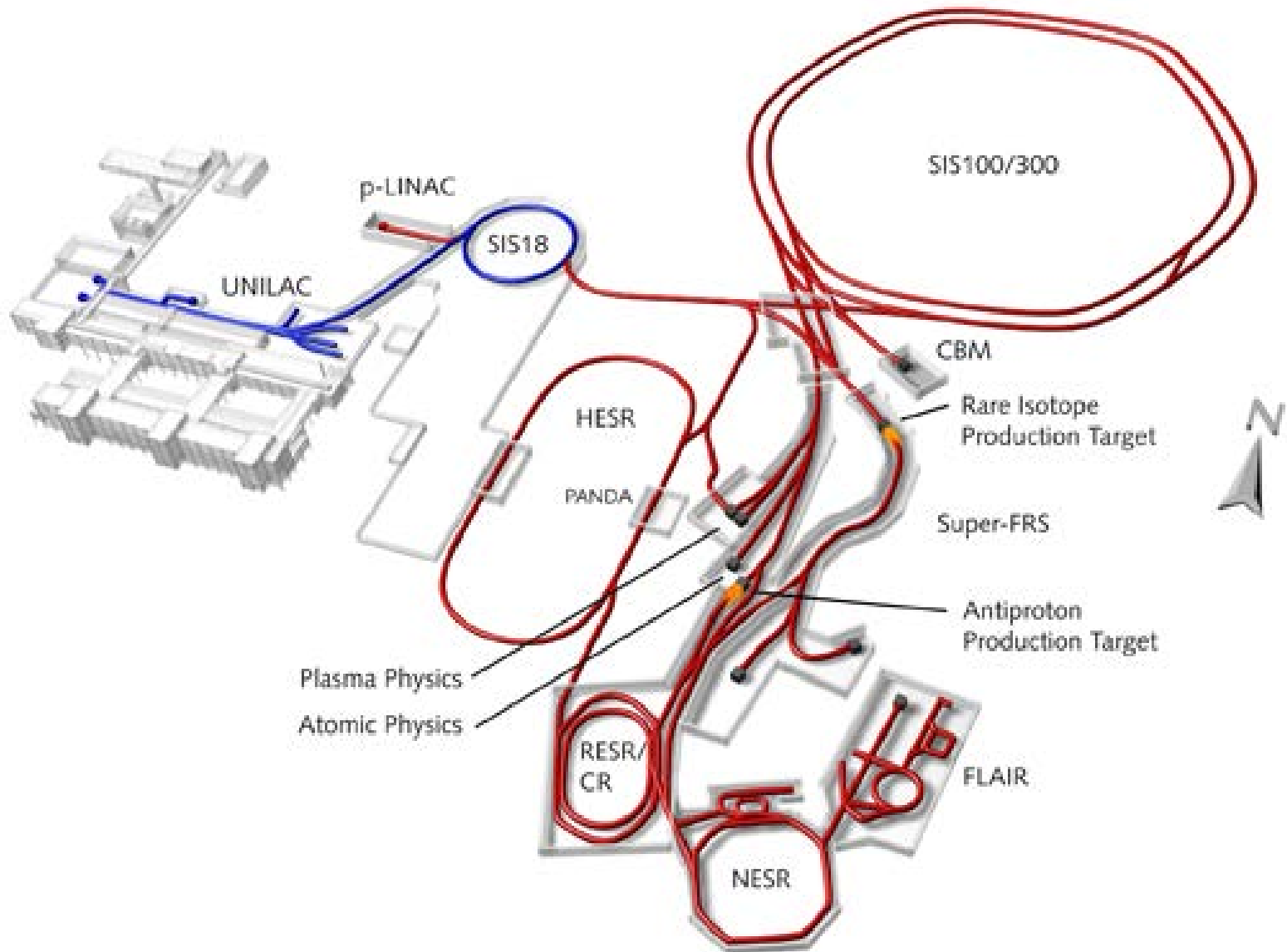


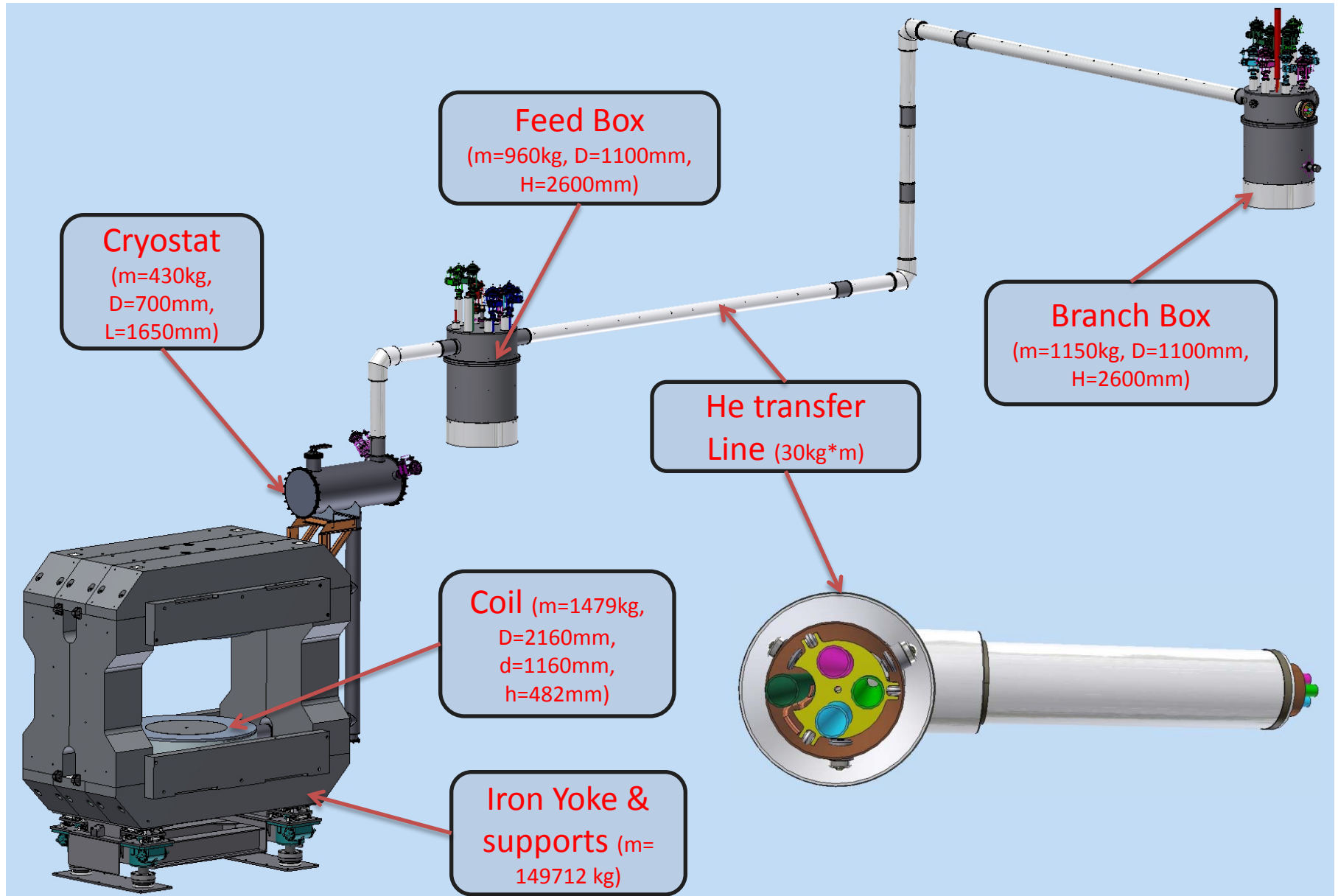
Assembly, survey, alignment of the CBM Dipole Magnet

24-25.04.2018, BINP, [M.Kholopov](#), A.Bragin, S. Pivovarov.

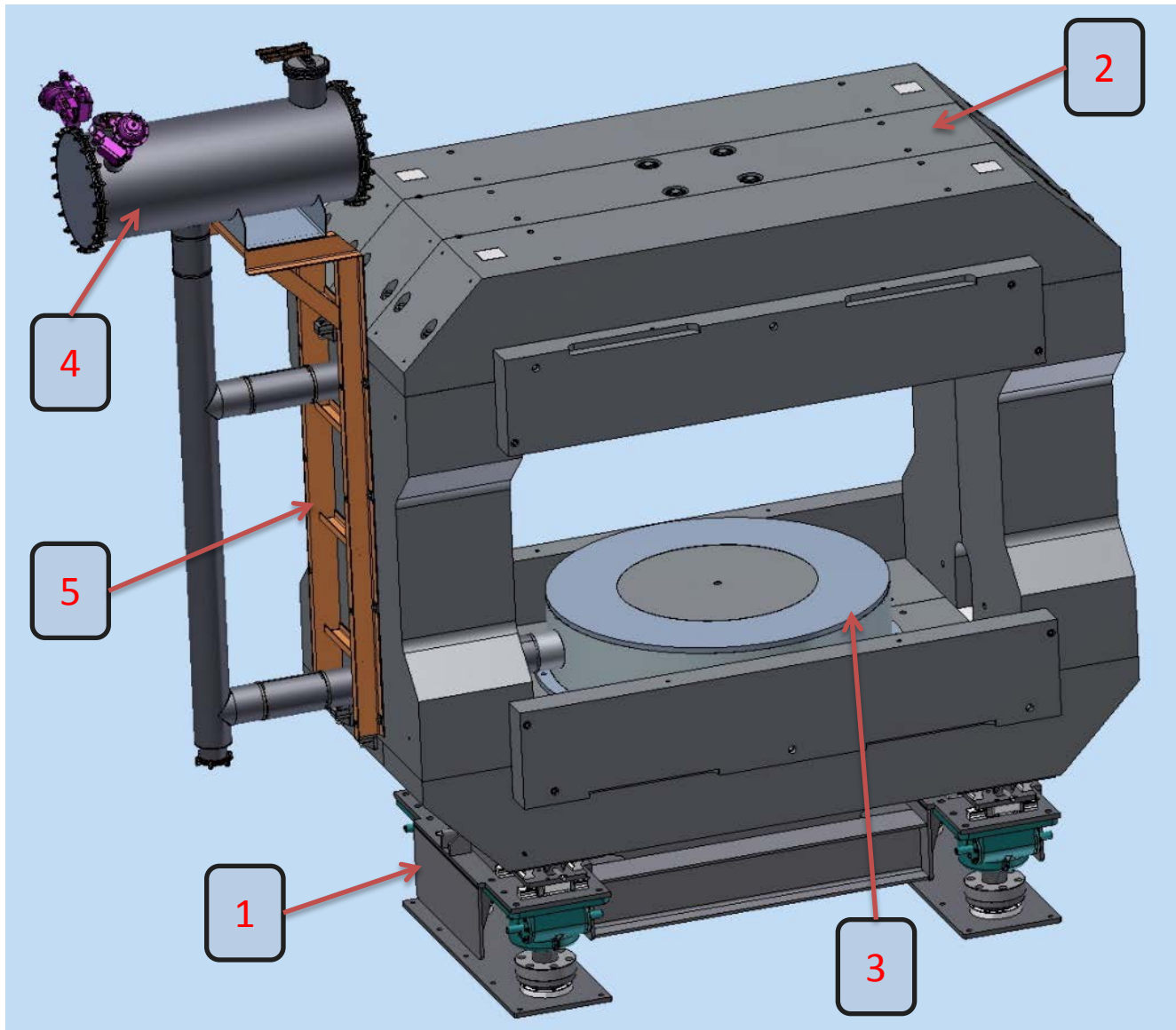
FAIR



3D Model of CBM Magnet and cryosystem

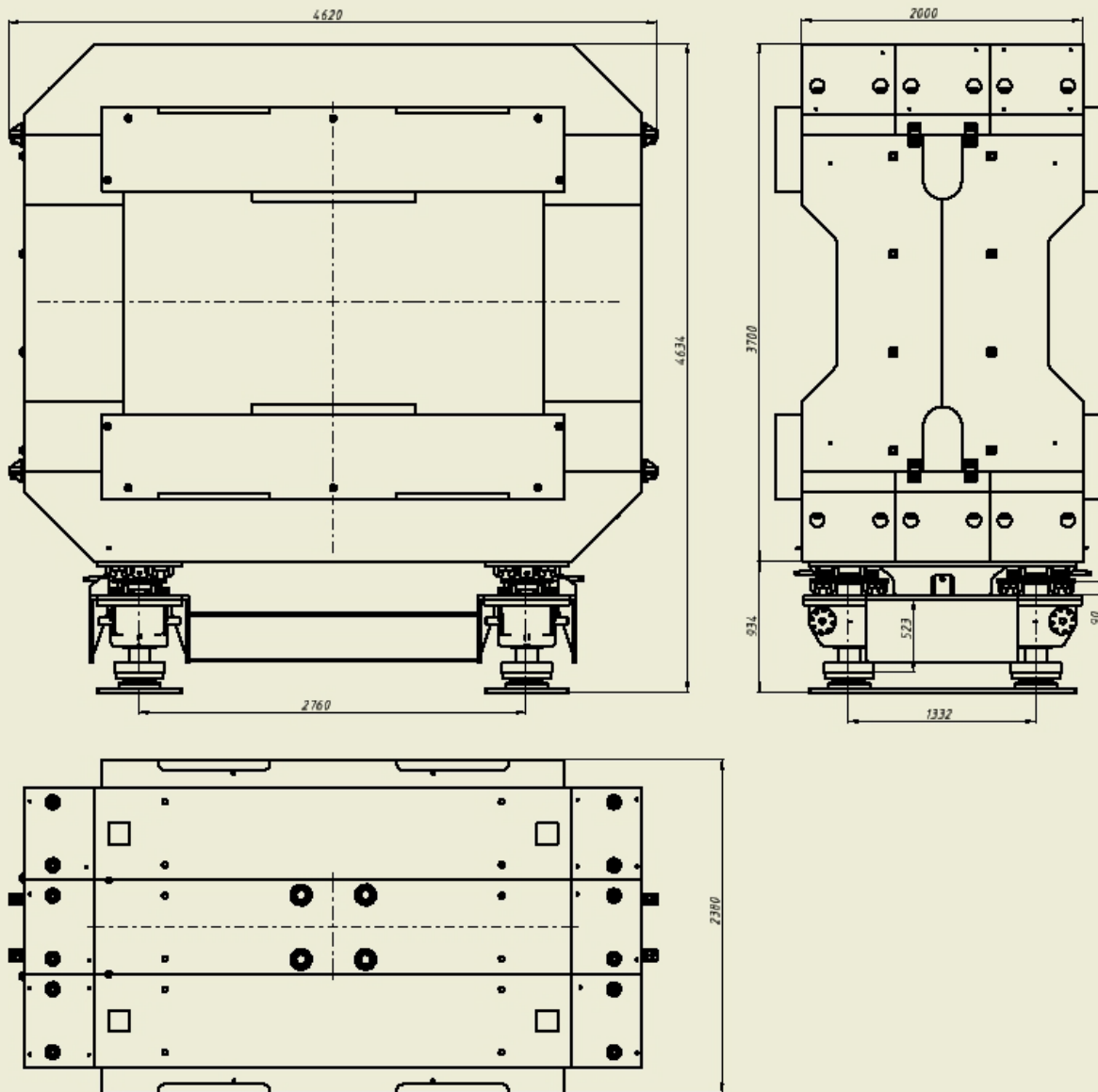


3D Model of CBM Magnet (new design)



1. Support
2. Iron Yoke
3. Coils
4. Cryostat
5. Cryostats support

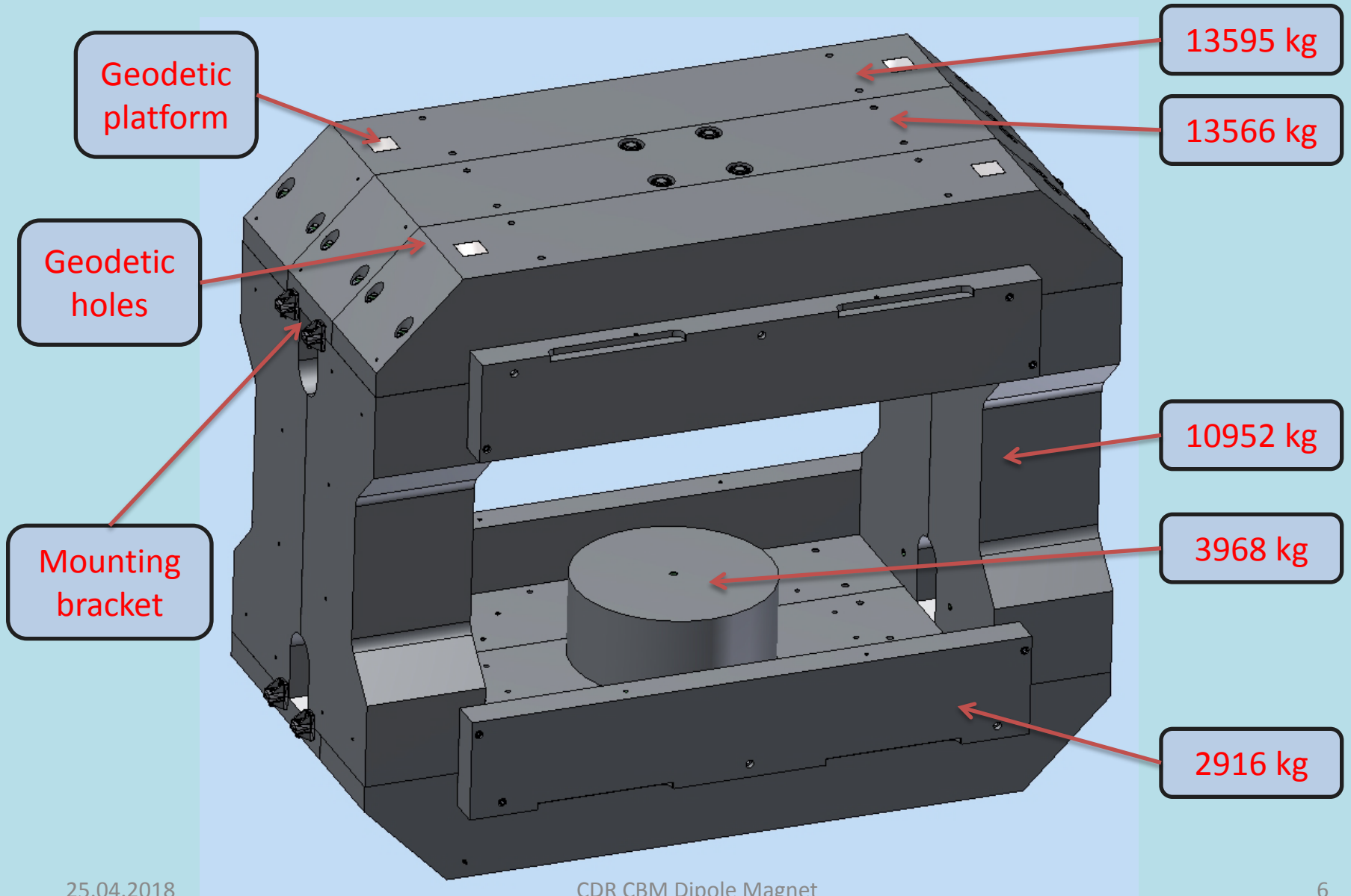
Iron Yoke and supports drawing



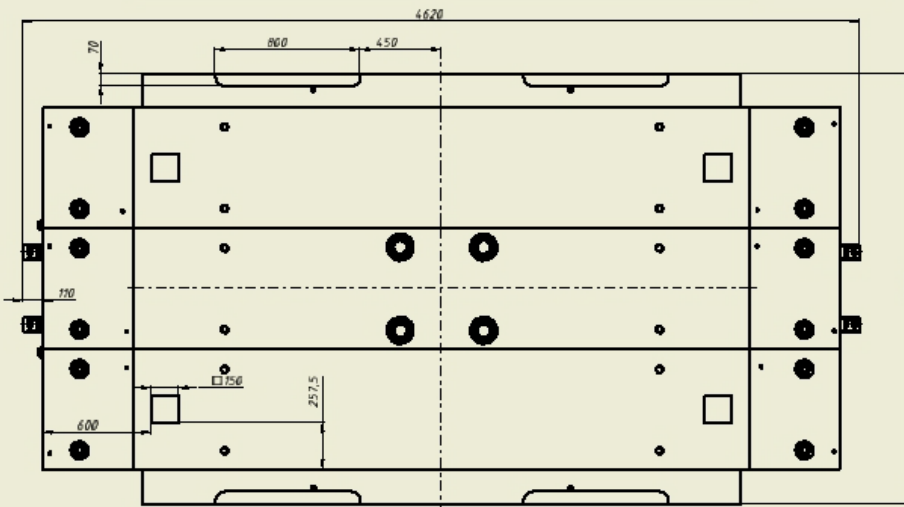
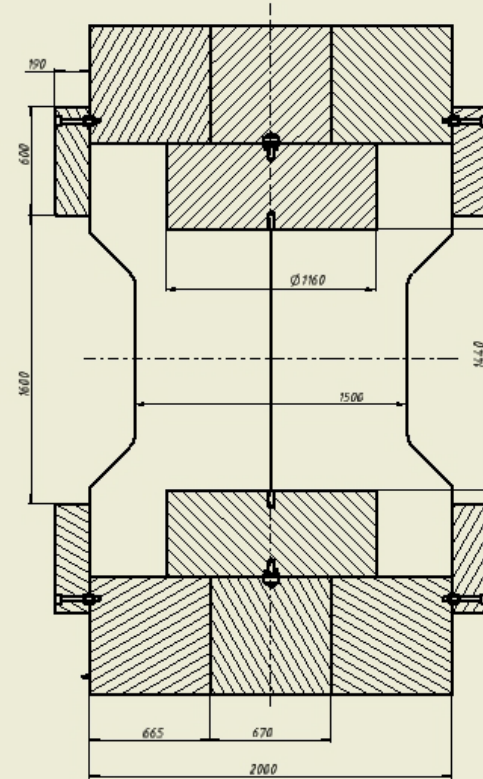
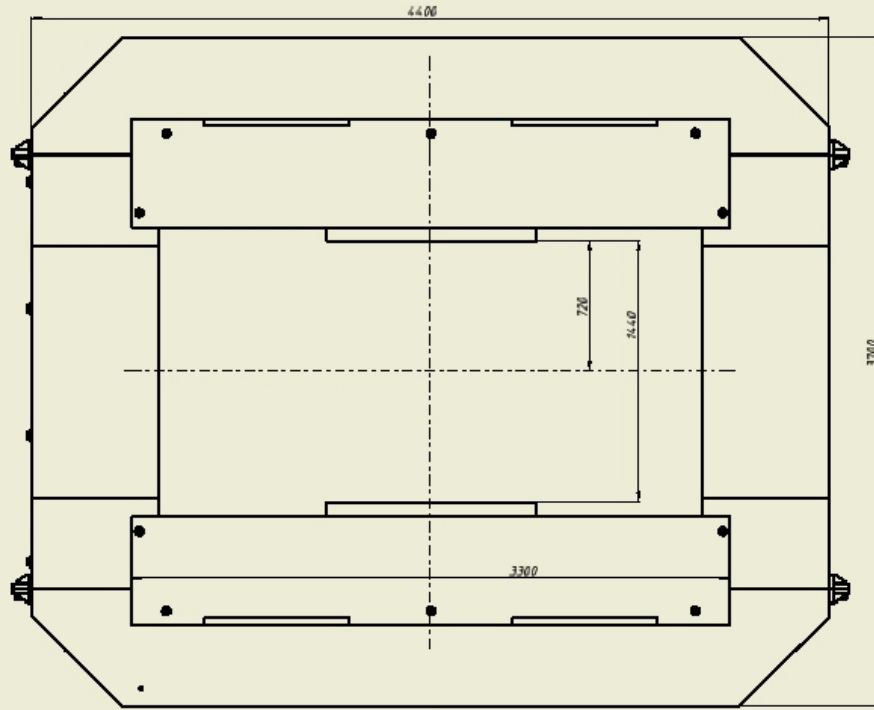
Weight and size

- $m = 149712 \text{ kg}$
- $A = 2380 \text{ mm}$
- $B = 4620 \text{ mm}$
- $H = 4634 \text{ mm}$

Iron Yoke 3D Model



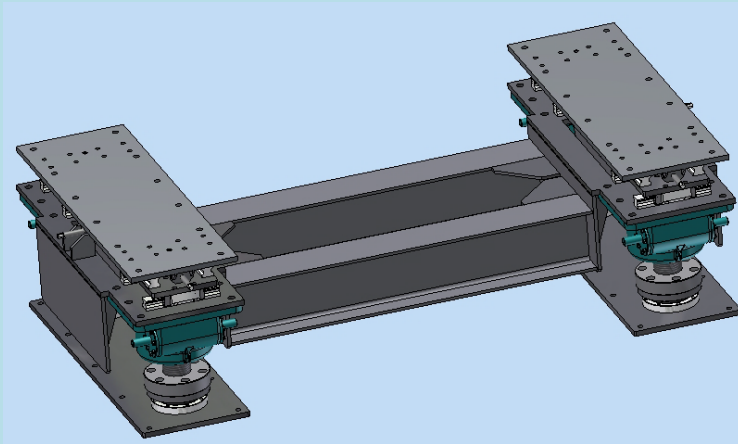
Iron Yoke drawing



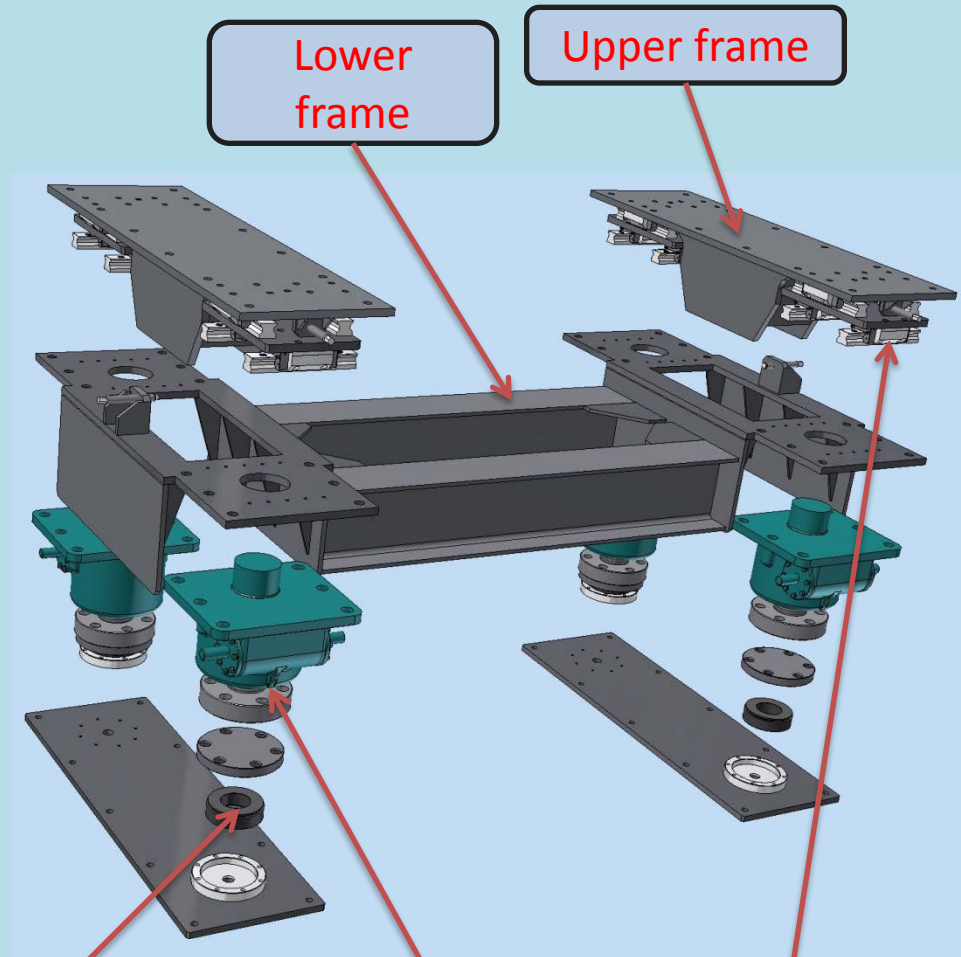
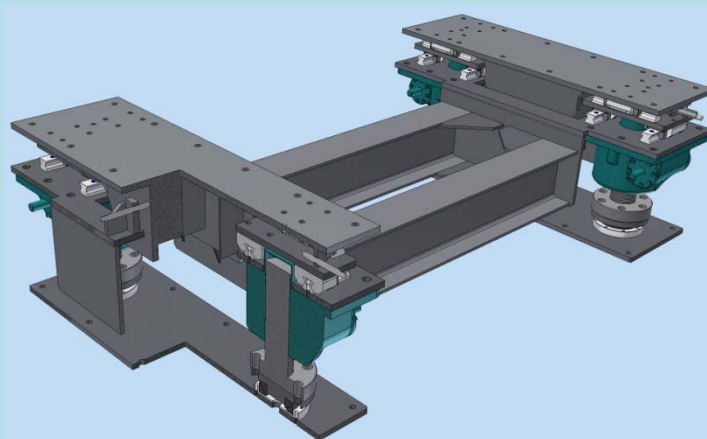
Weight and size

- $m = 145221 \text{ kg}$
- $A = 2380 \text{ mm}$
- $B = 4620 \text{ mm}$
- $H = 3700 \text{ mm}$

CBM Magnet suport



- $m = 4346 \text{ kg}$
- $1980 \times 3460 \times 934 \text{ mm}$
- move in 3D $\pm 40 \text{ mm}$
- Loading capacity 200000 kg

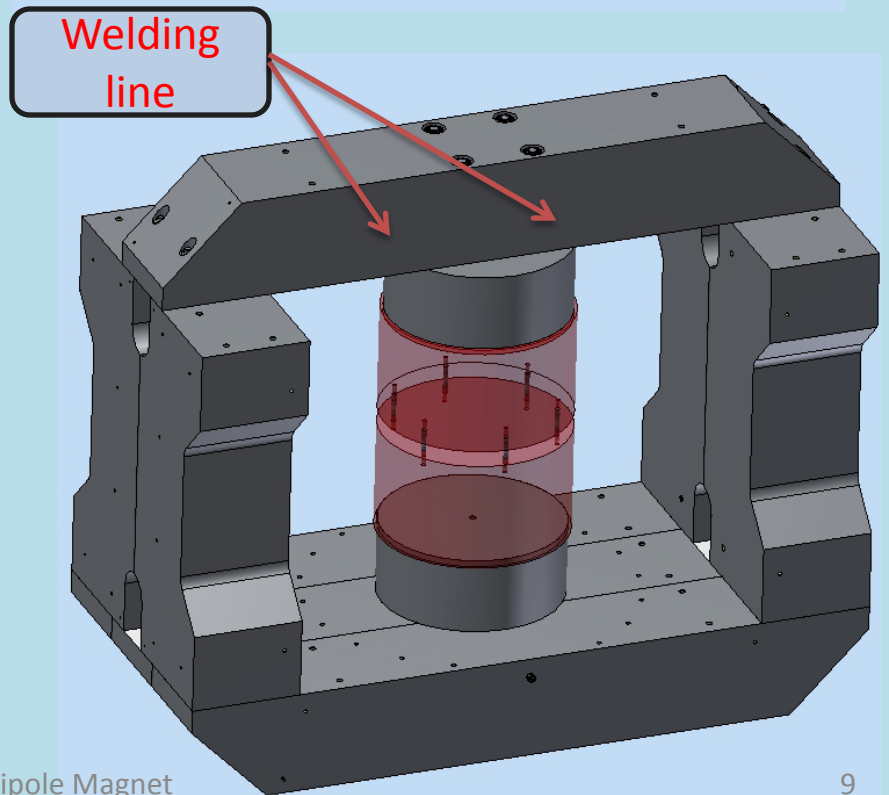
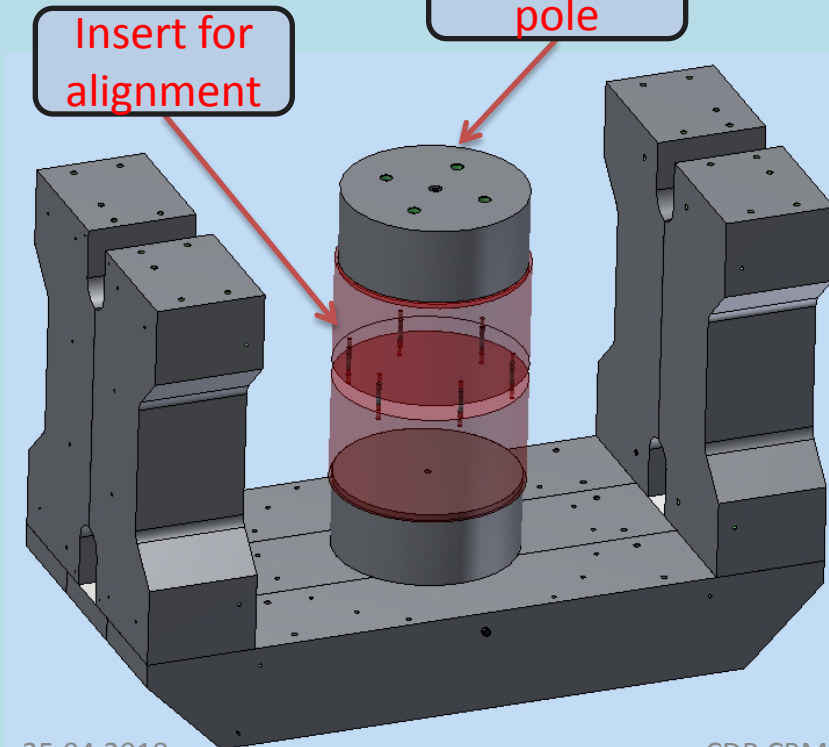
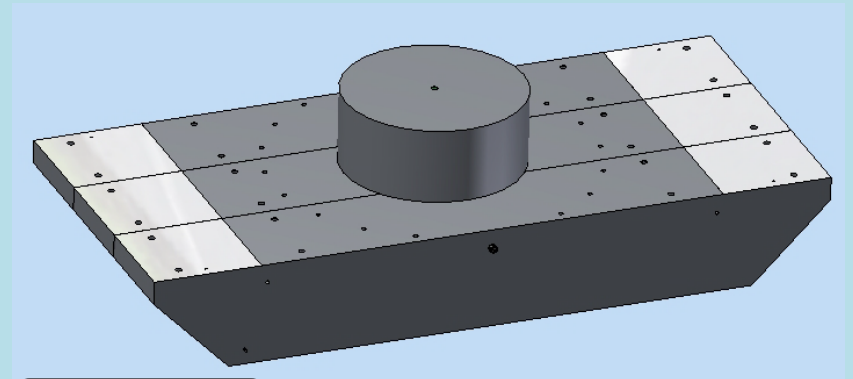
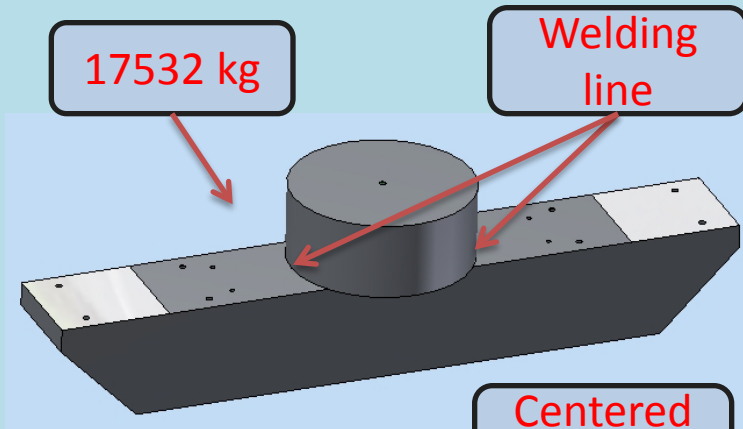


Spherical bearings
(DIN ISO12240-2)
loading capacity 2.585 kN

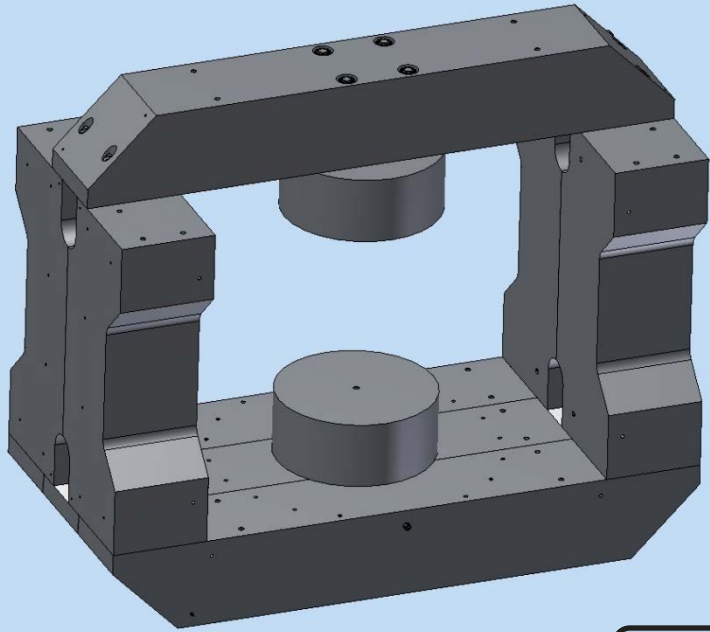
Screw jack
loading capacity 100T
(6" lifting screw)

SKF roll-rail guides loading capacity 41,4T

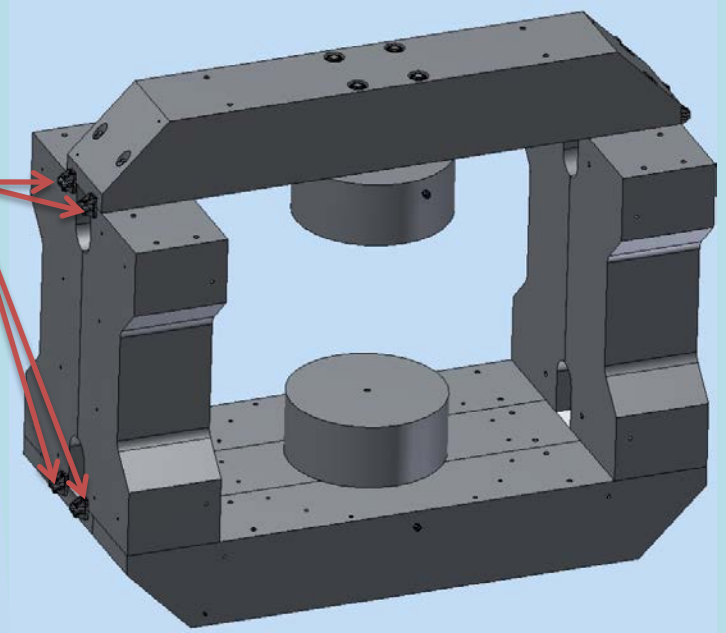
Assembling of CBM Iron Yoke



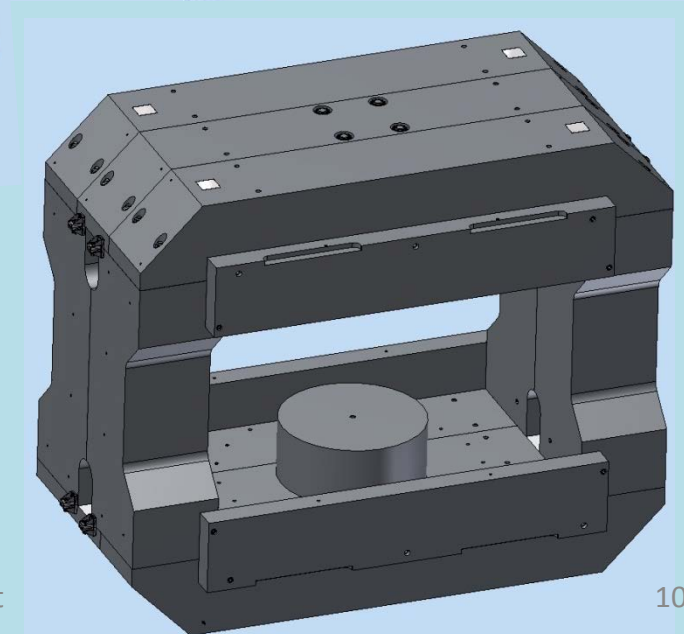
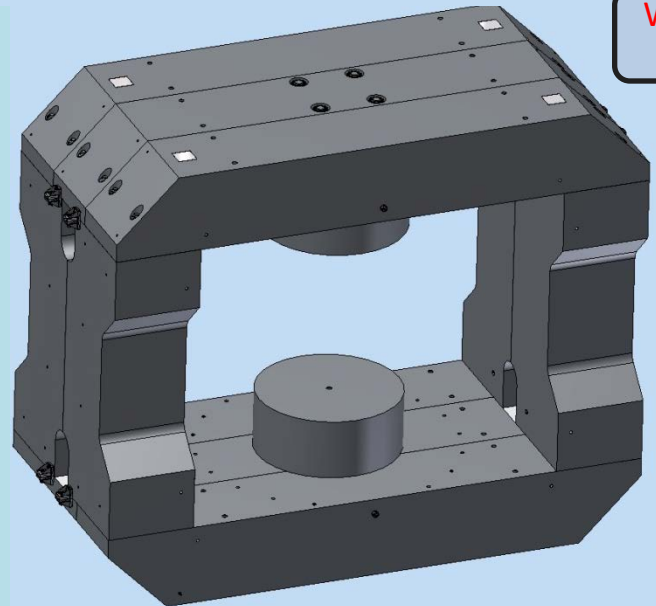
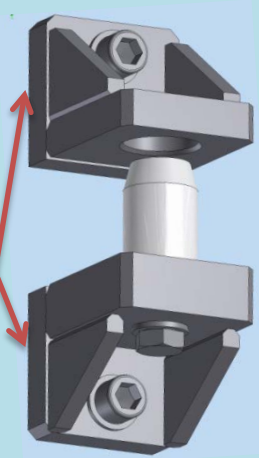
Assembling of CBM Iron Yoke



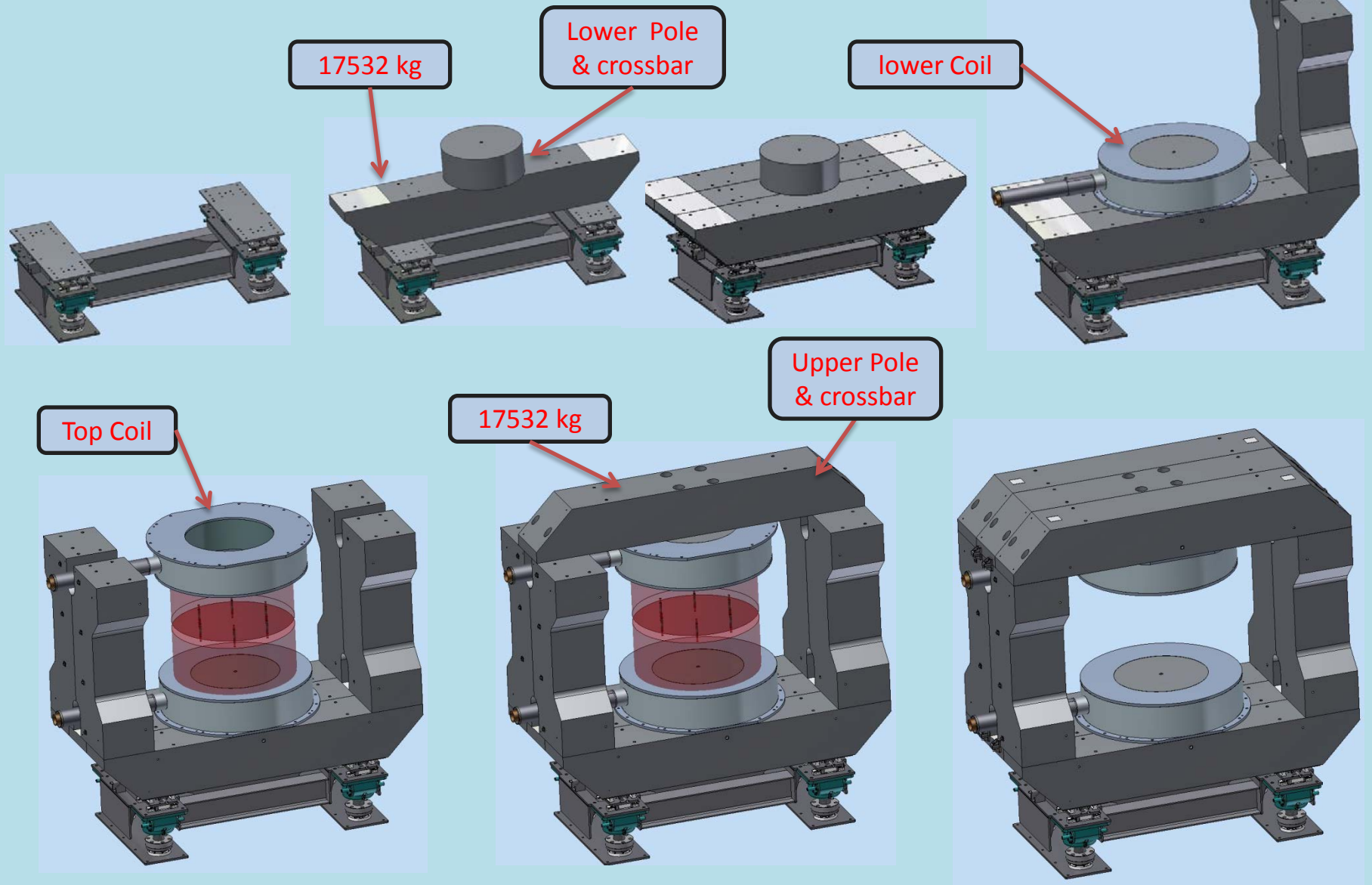
Mounting bracket



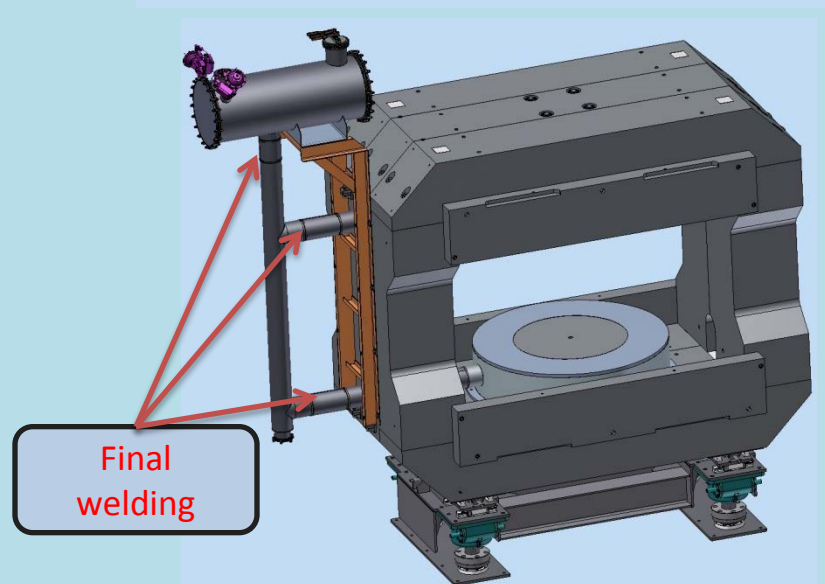
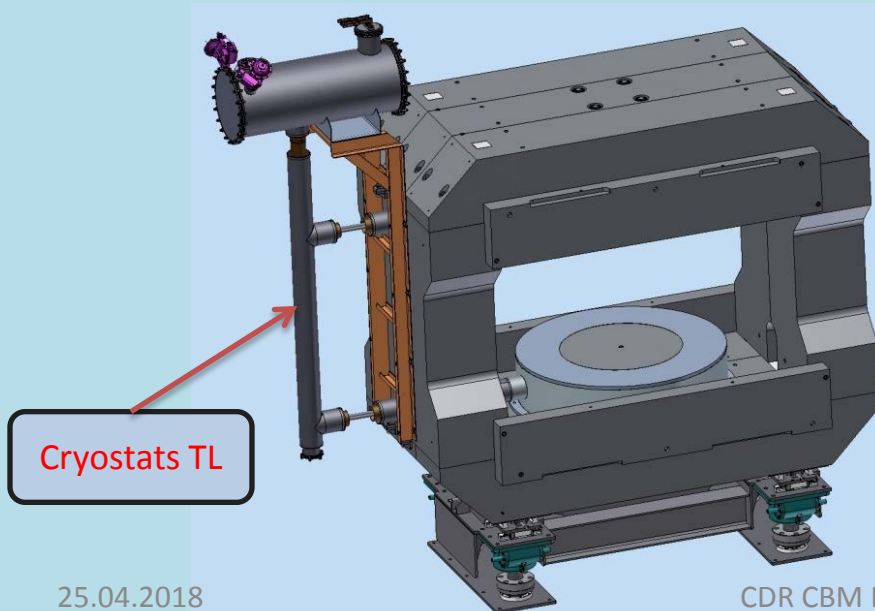
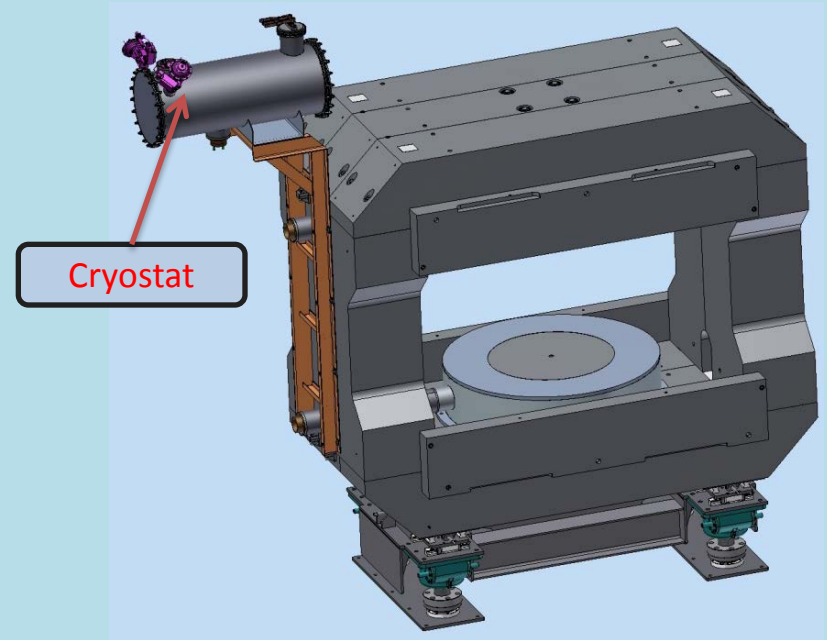
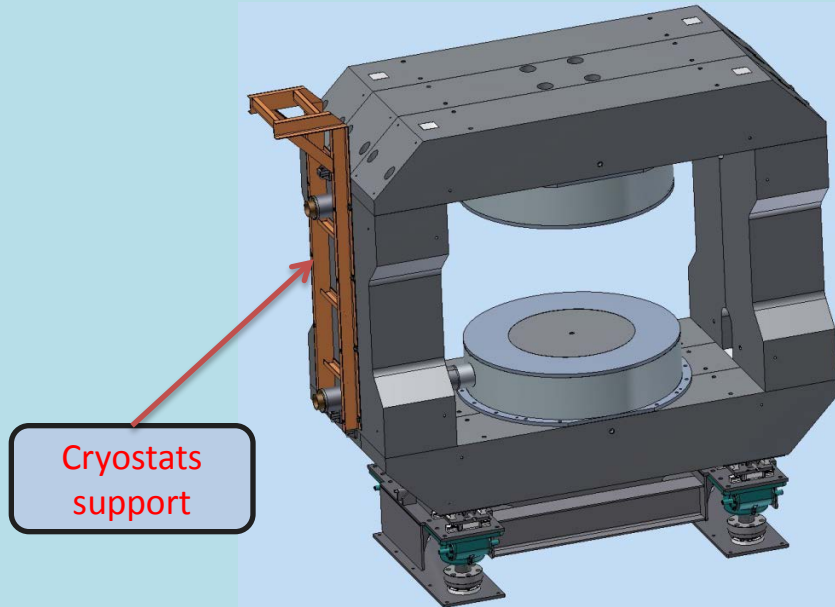
Welding circuit



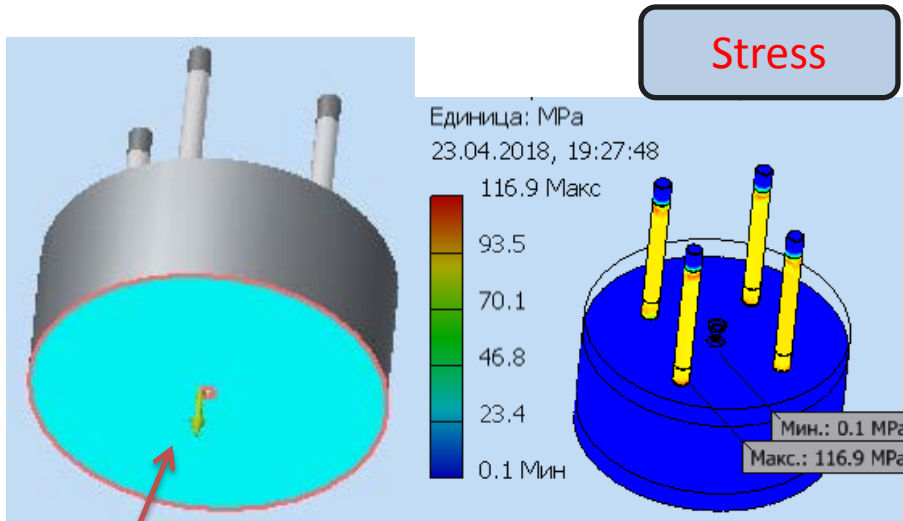
Assembling of CBM Magnet



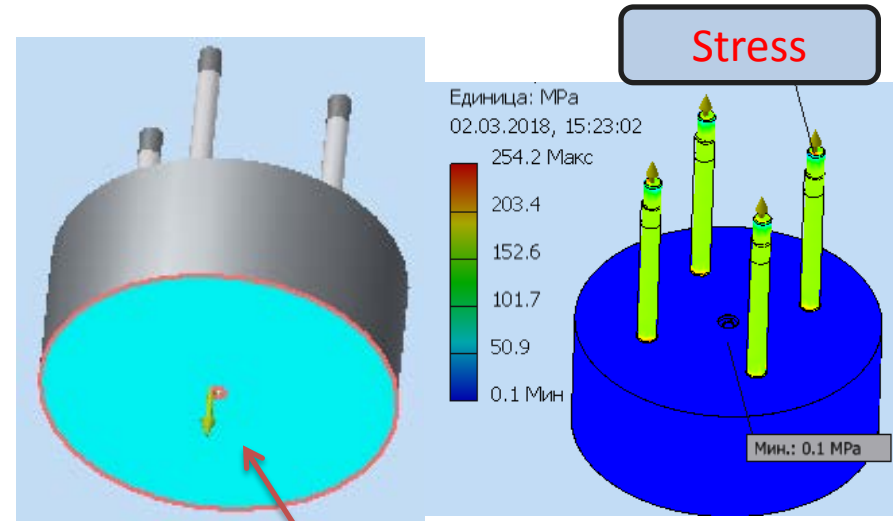
Assembling of CBM Magnet



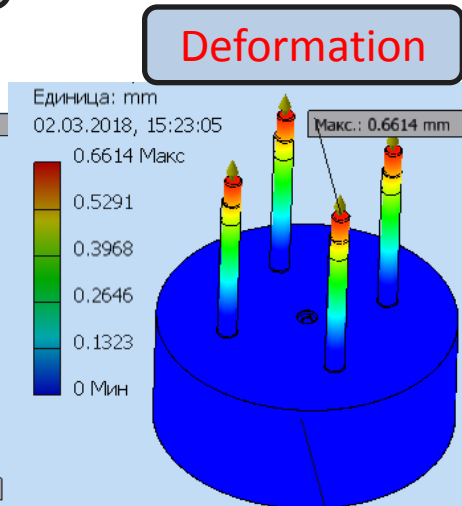
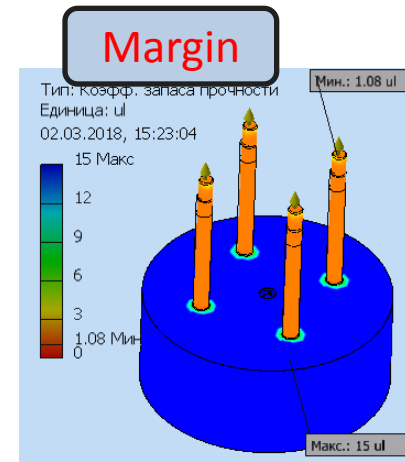
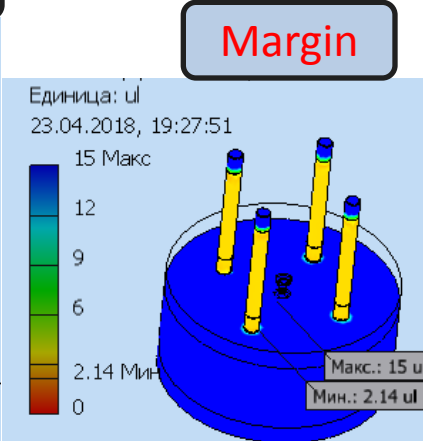
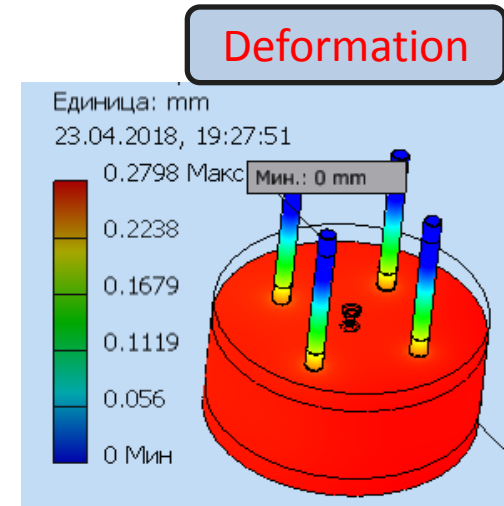
Calculation of Pole CBM magnet



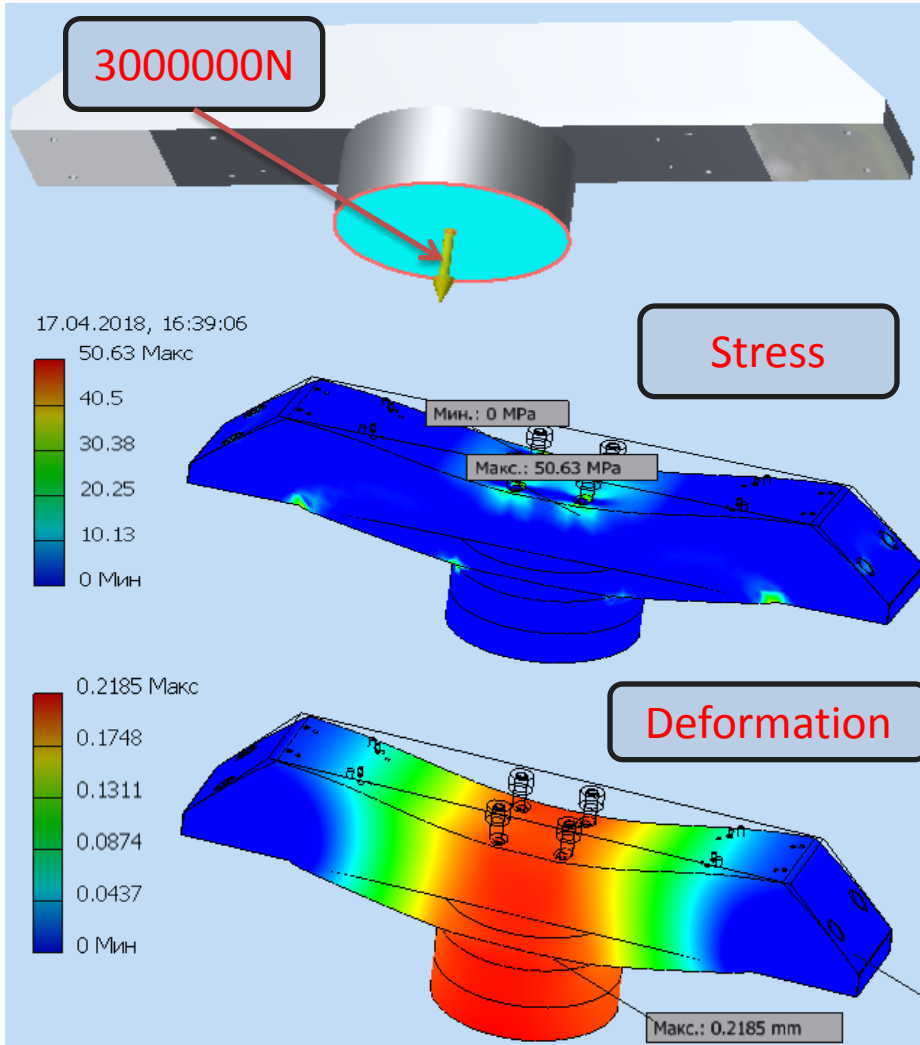
1500000N



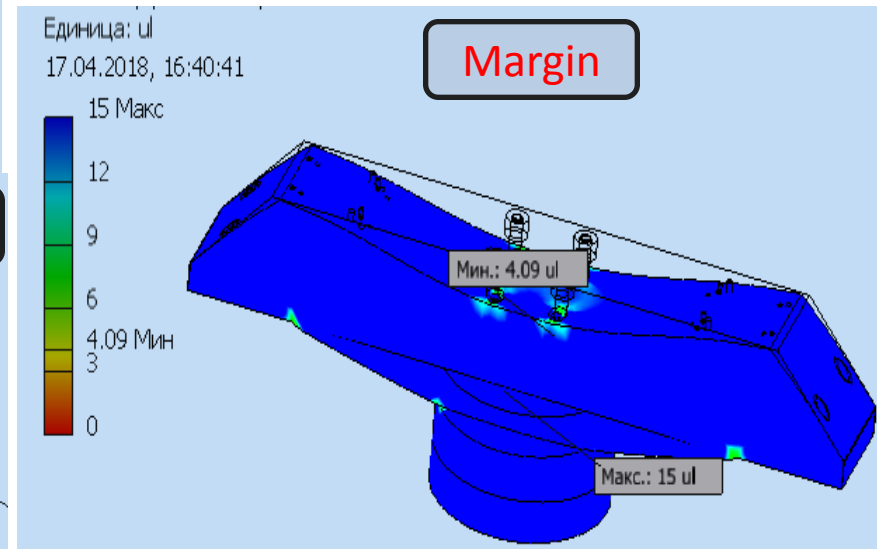
3000000N



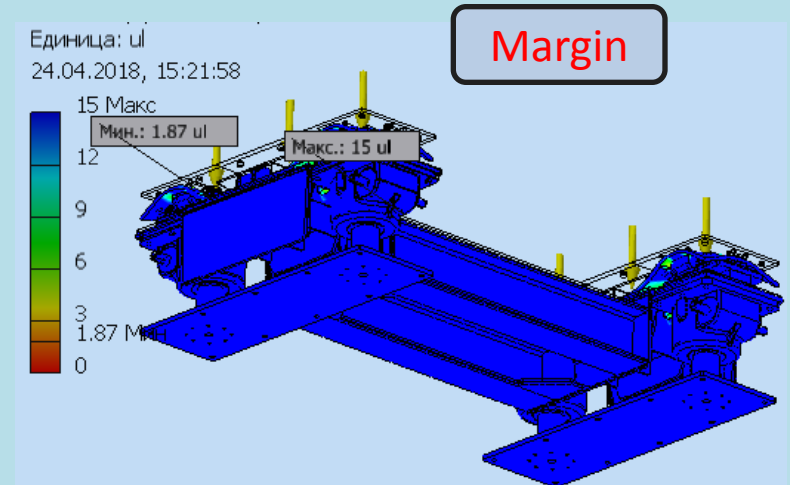
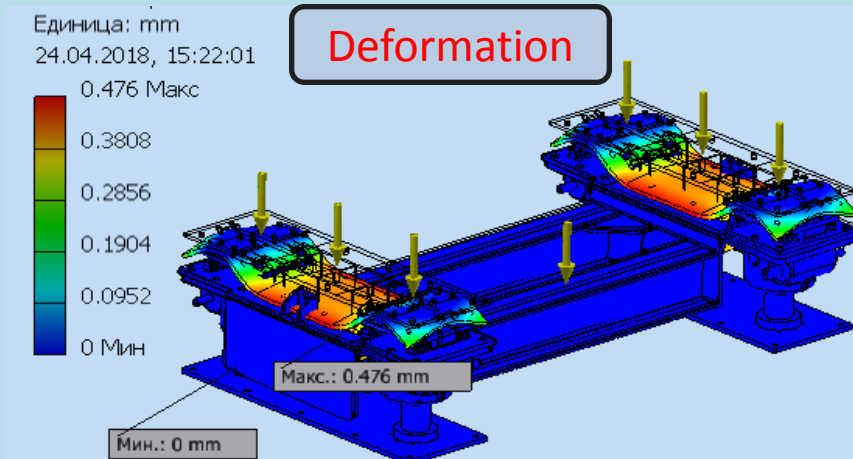
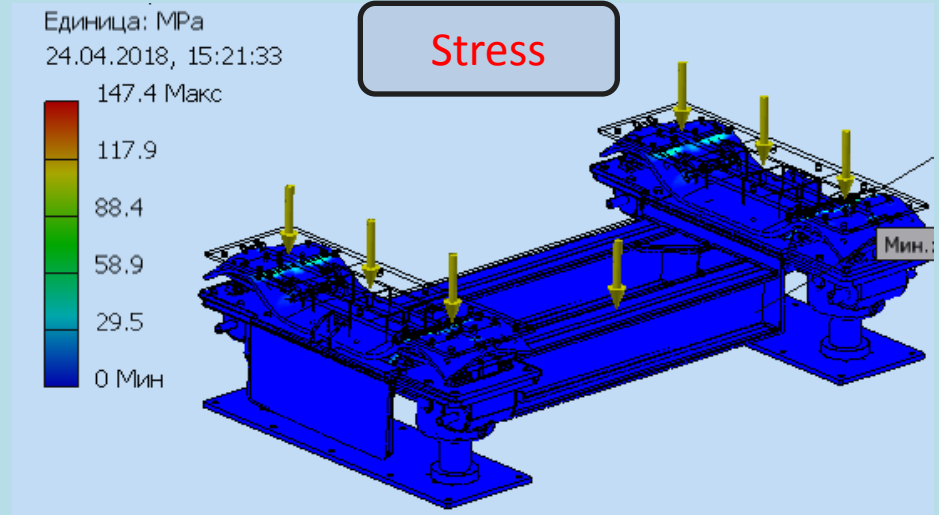
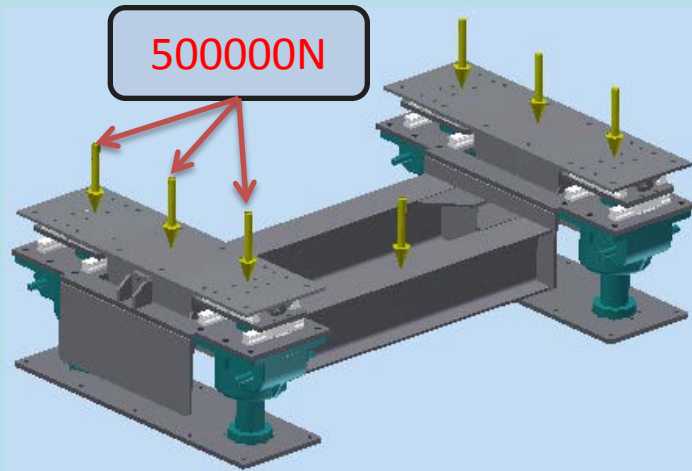
Calculation of Pole & crossbar CBM magnet



Имя	Low carbon steel	
General	Mass density	7.86 г/см ³
	Yield strength	207 МПа
	Ultimate tensile strength	345 МПа
stress	young modulus	220 ГПа
	poisson ratio	0.275 бр
	Shear modulus of elasticity	86.2745 ГПа



Calculation of CBM magnet supports



robust



Thank you for your
attention!