



Istituto Nazionale di Fisica Nucleare
SEZIONE DI LECCE

Servizio di Meccanica

Consiglio di Sezione del 7.7.2021

A.Miccoli

STAFF

- Angelo Innocente
- Alessandro Miccoli
- Giorgio Rizzo (dal 6/9/2021...)
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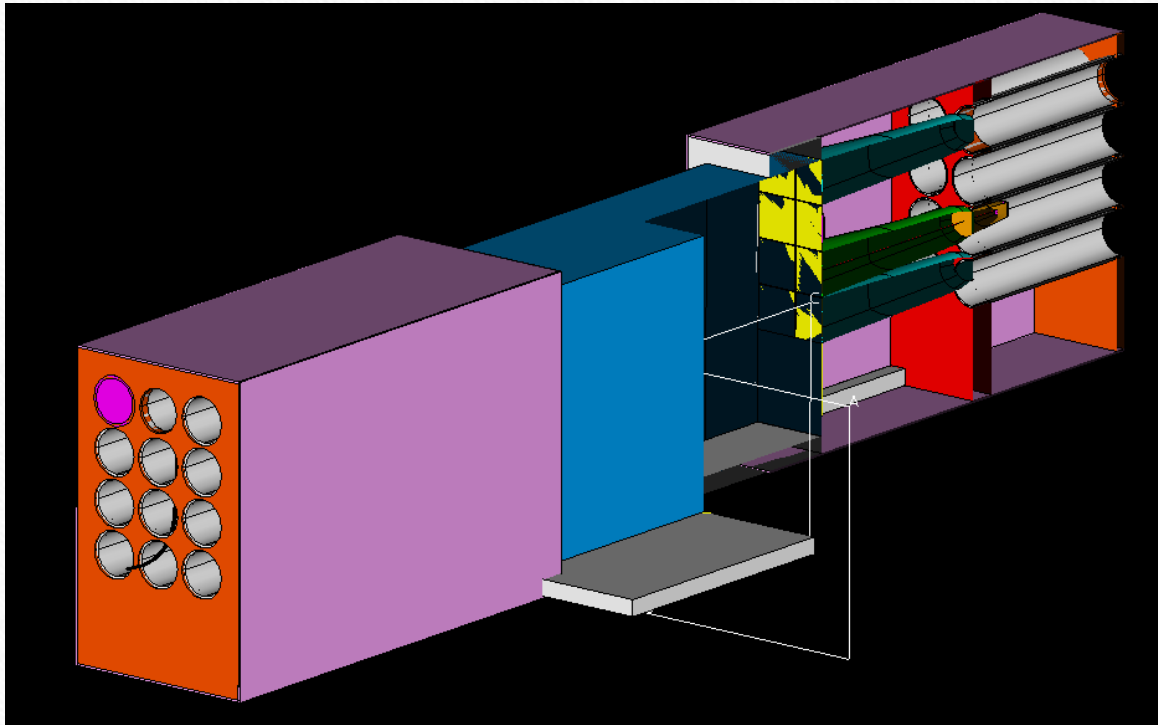
Lavori conclusi

- Calorimetro exp Dune;
- Handling Frame (inner) exp. ITK;
- Storage box exp. ITK;
- Progettazione monitoring chamber exp. MEG;
- Progettazione drift chamber exp. Cremlin+;
- Gestione clean room;

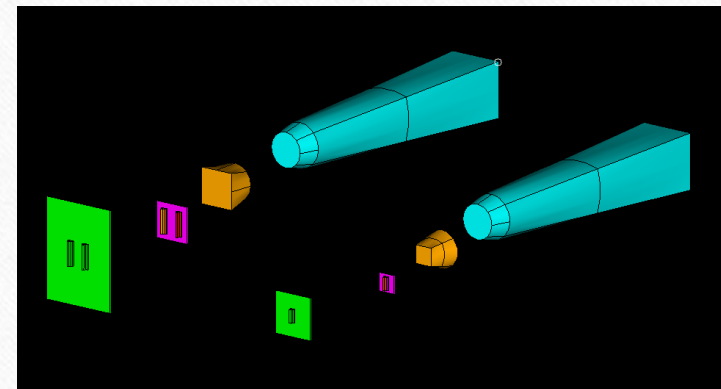
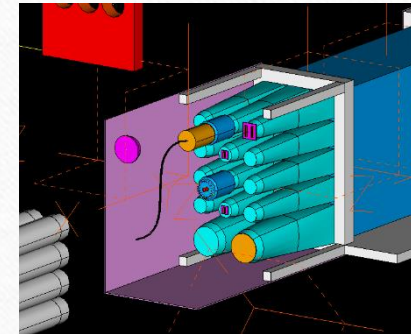
Lavori in corso di svolgimento

- Lavorazione handling frame versione outer exp.ITK;;
- Progettazione e realizzazione prototipo sistema movimentazione e integrazione moduli half ring exp.ITK;
- Progettazione e realizzazione sistema pick and place moduli su half ring exp.ITK;
- Progettazione finale in funzione delle simulazioni F.E. camera a drift exp.Cremlin+;
- Realizzazione prototipo drift chamber exp.Cremlin+;
- Test beam Cern;
- Sistema motorizzazione parabola raggi cosmici;

Calorimetro exp. DUNE

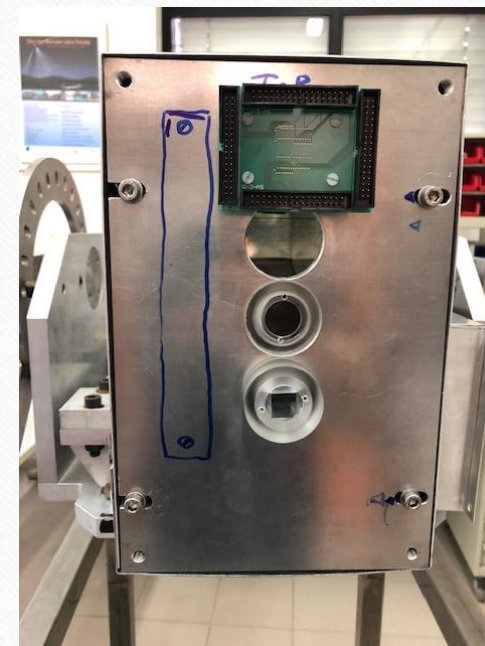
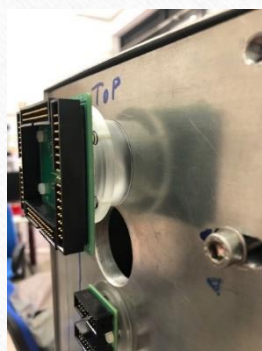


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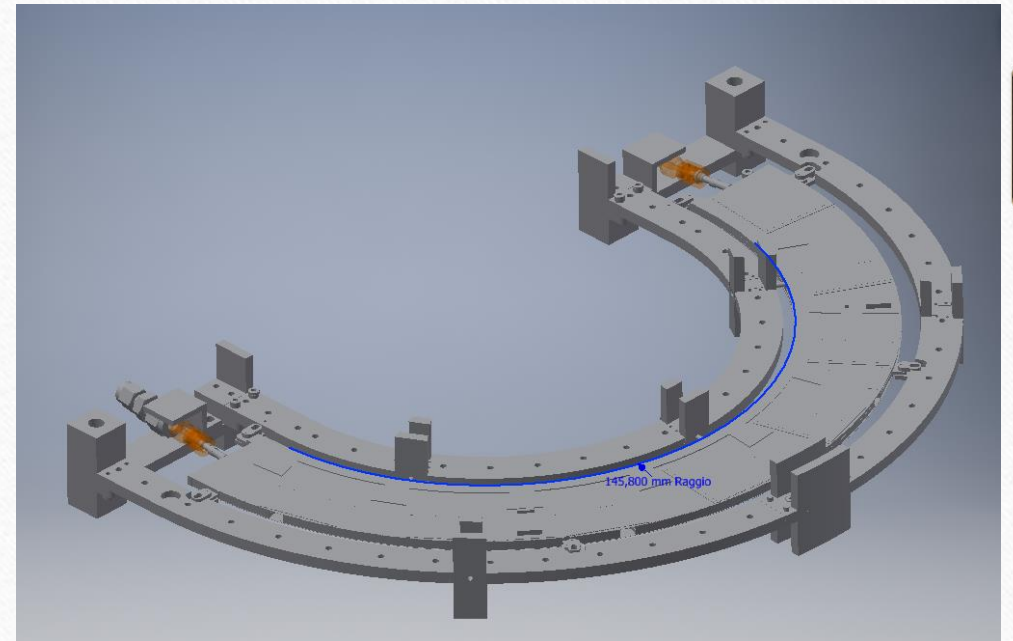
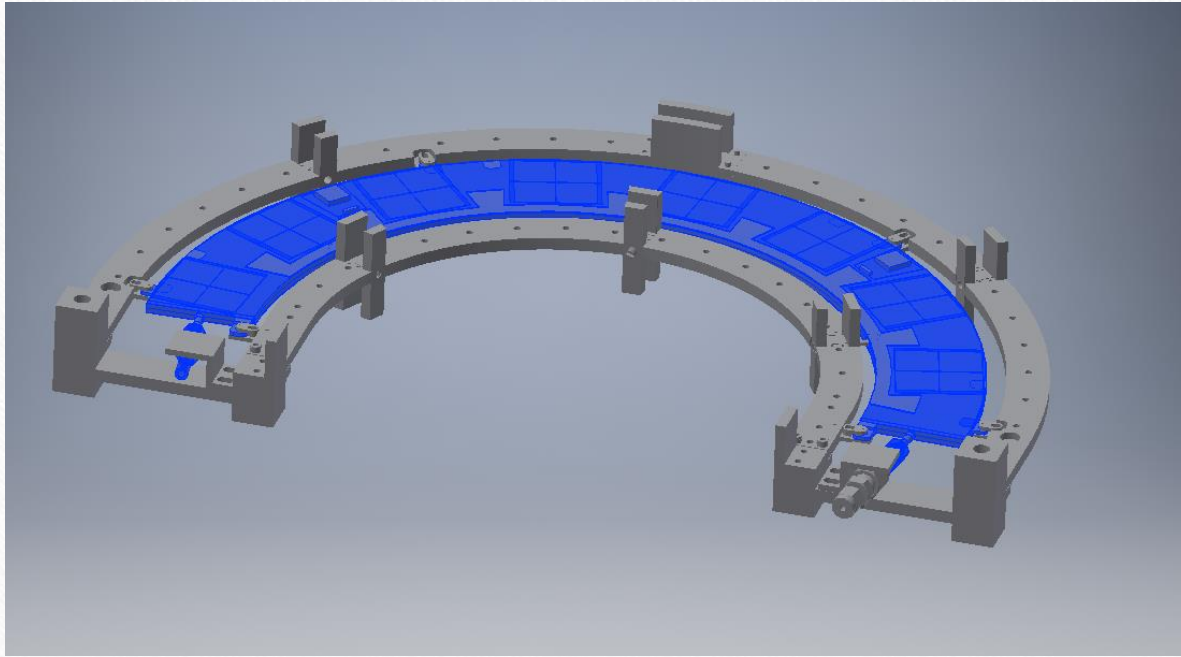




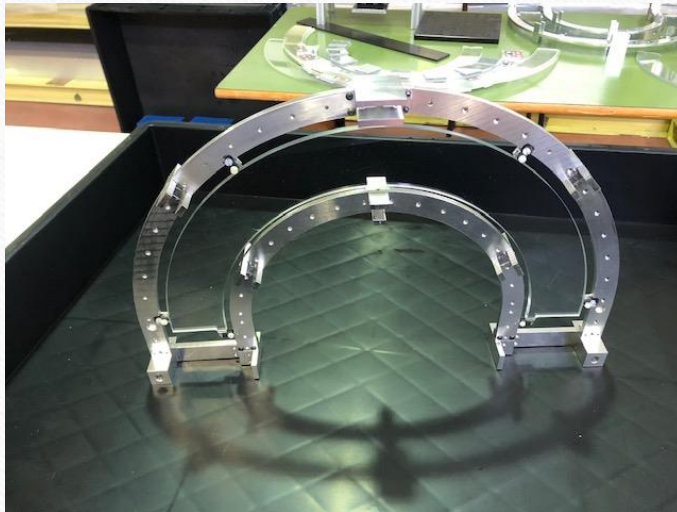
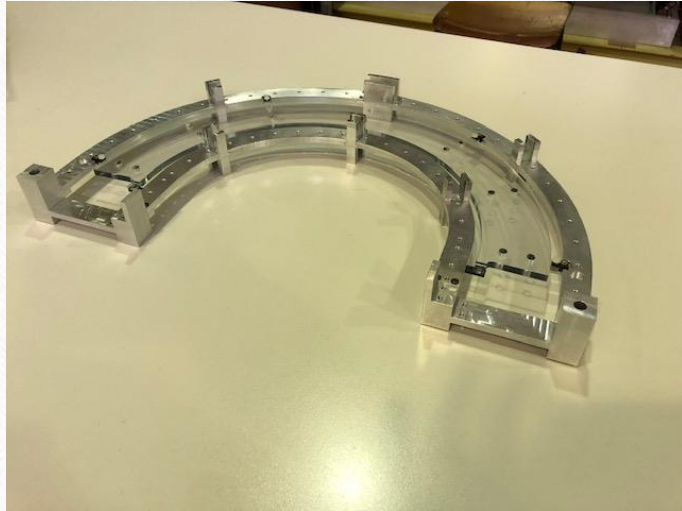
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Handlig Frame



Handling Frame



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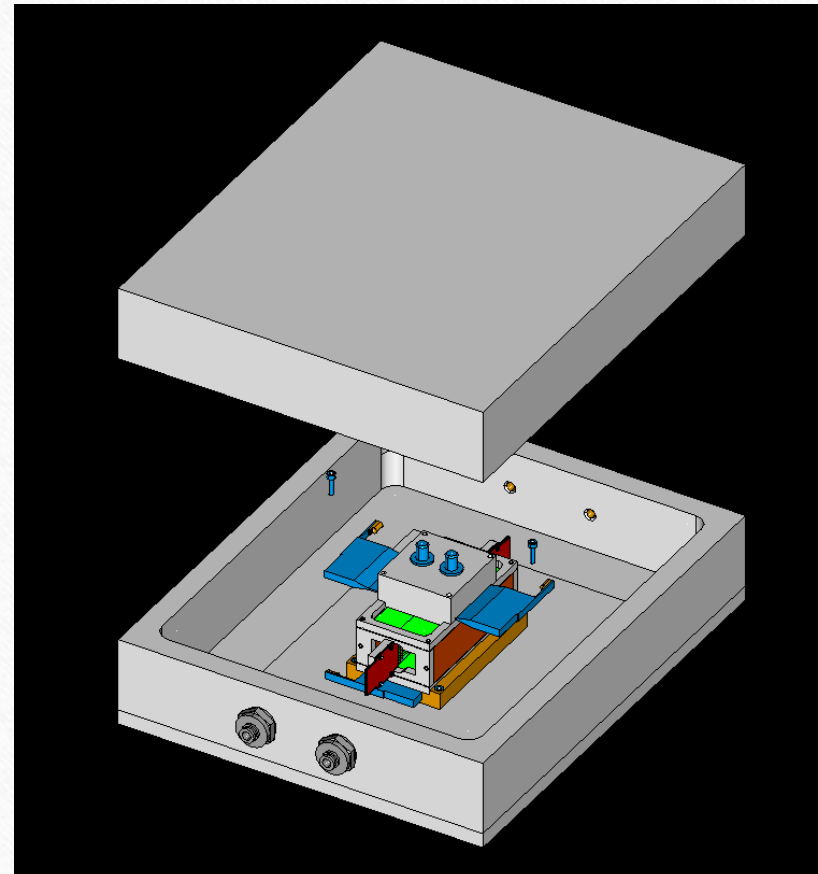
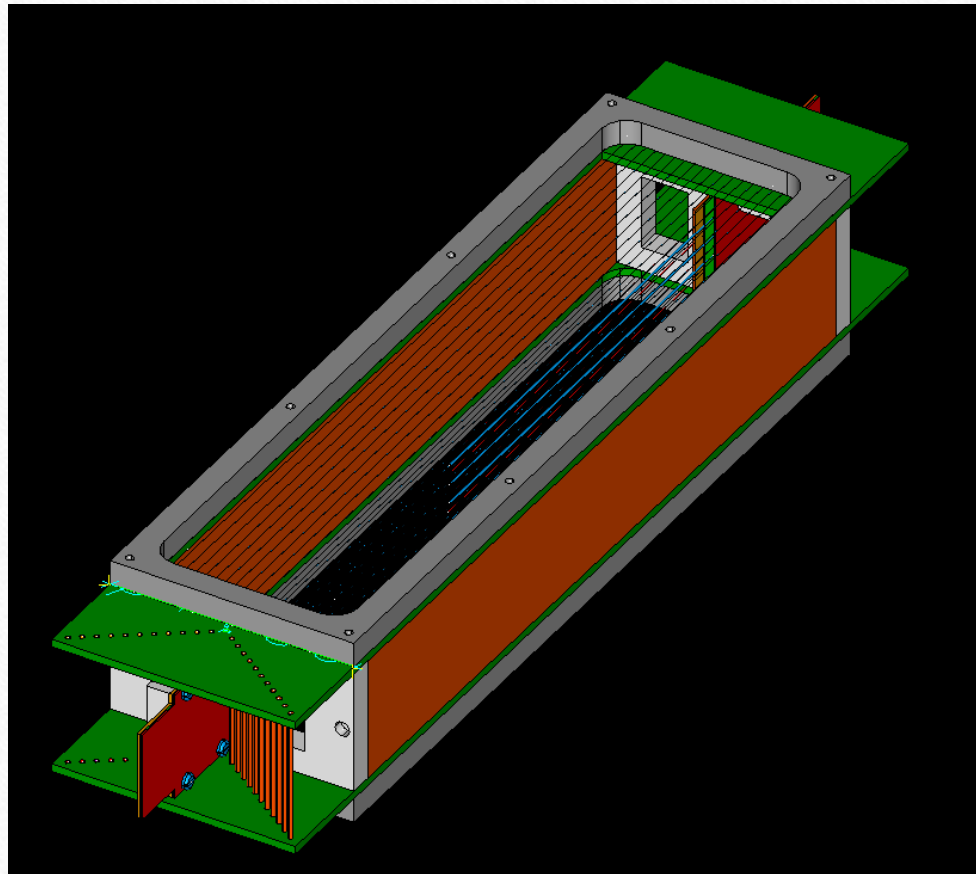
Storage box

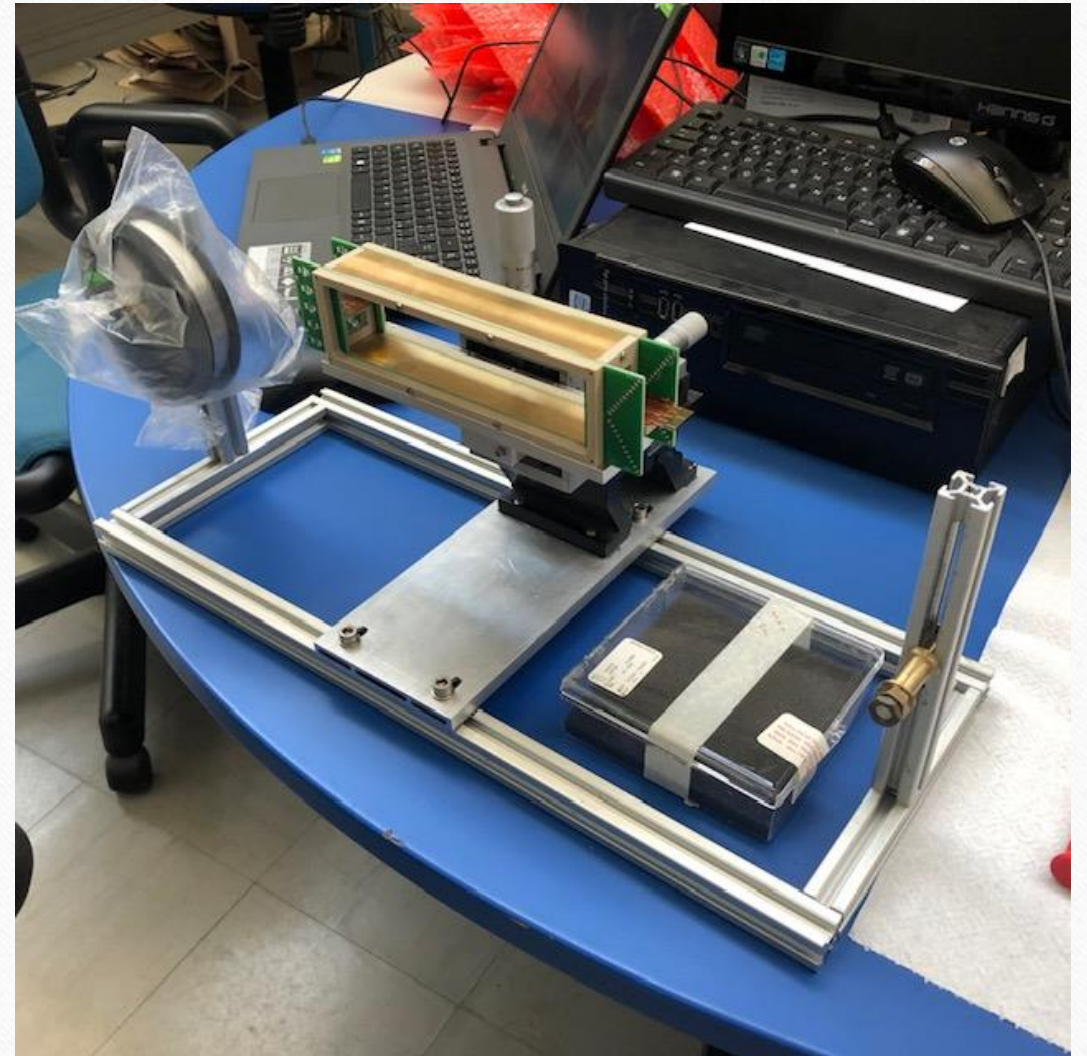
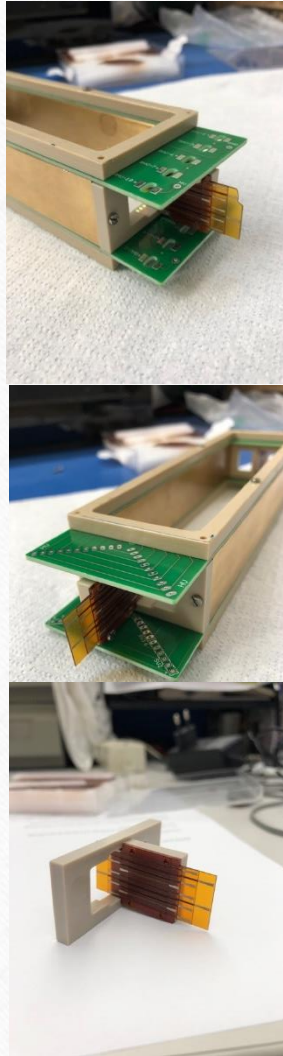
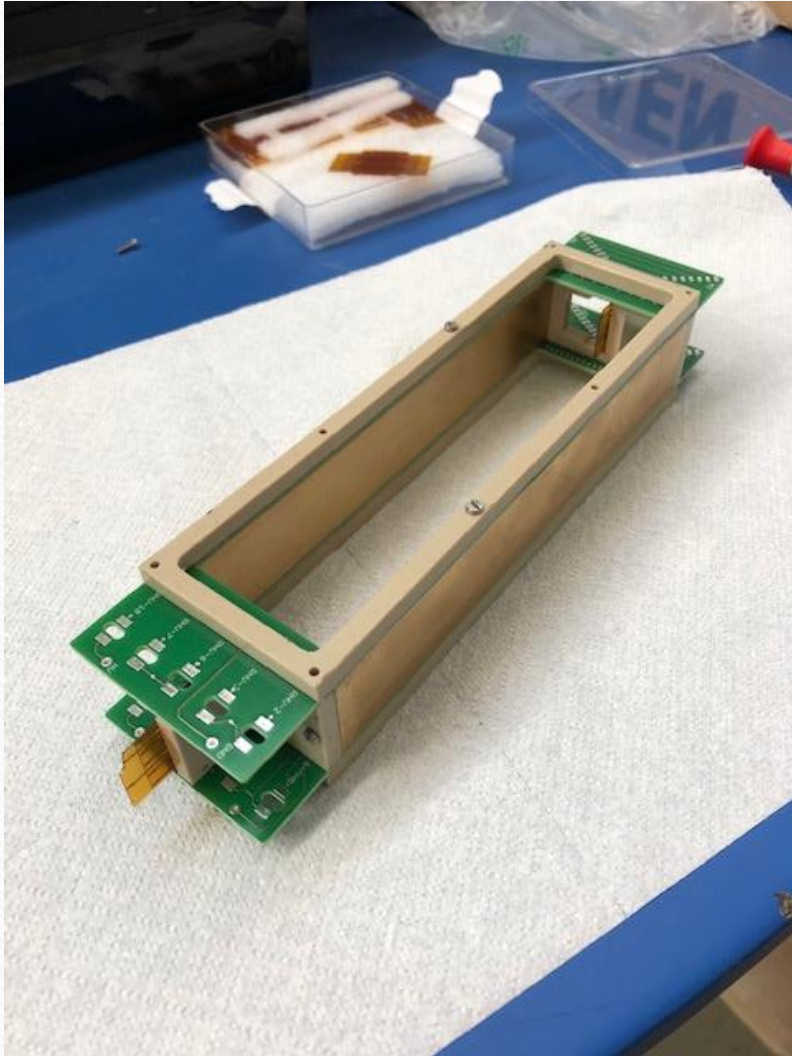


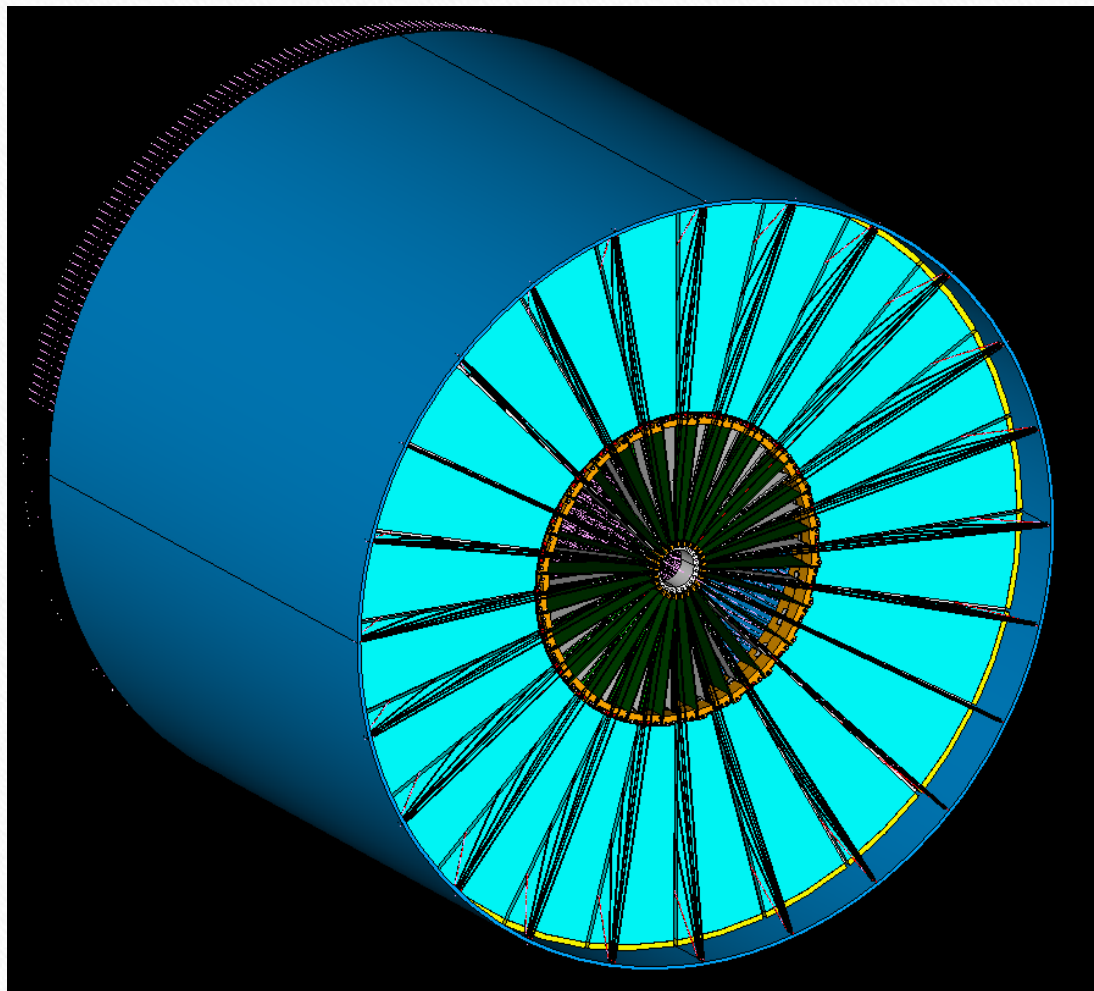
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Monitoring Chamber







Cremlin+

De 609mm

Di 41mm

L 484mm

The «pierced» spokes for sector A: 24 spokes-48 PCB

The construction of the chamber is driven by three main purposes:

- 1) The high transparency.
- 2) The correct positioning of wires on precise coordinates in the space.
- 3) The mechanical stability of the whole structure.

We intend to make a rectangular hole inside the spokes. 24 of the 48 PCB will be inserted in the 24 «pierced» spokes. The other 24 will be placed between two adjacent spokes.

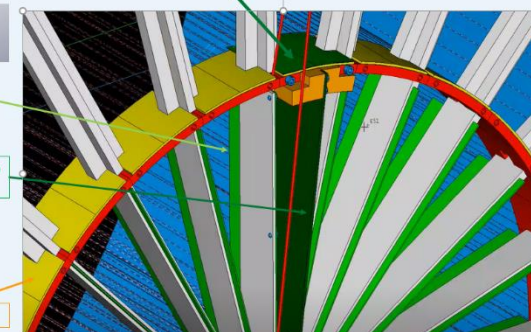
We intend to use two different thickness for PCBs

The ones inside spokes: 400 μ m

The ones between two adjacent spokes :1 mm

Support for PCB

Wire PCB for sector B

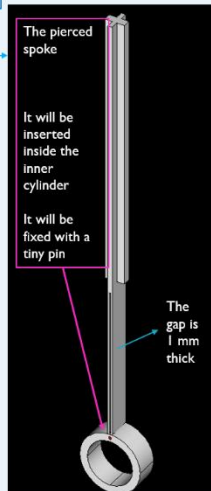


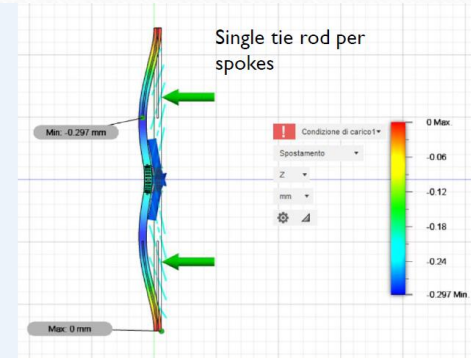
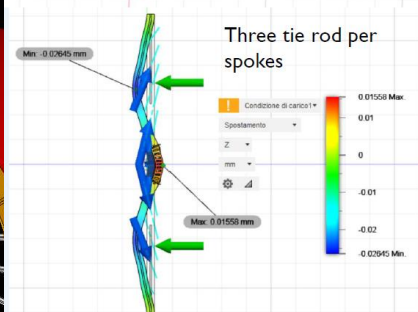
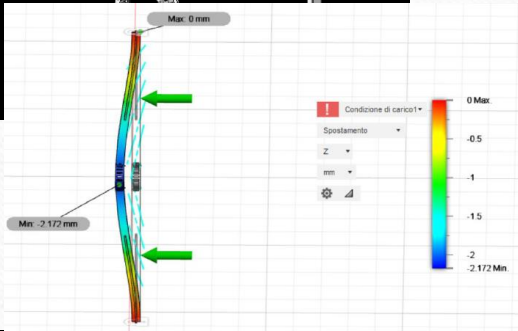
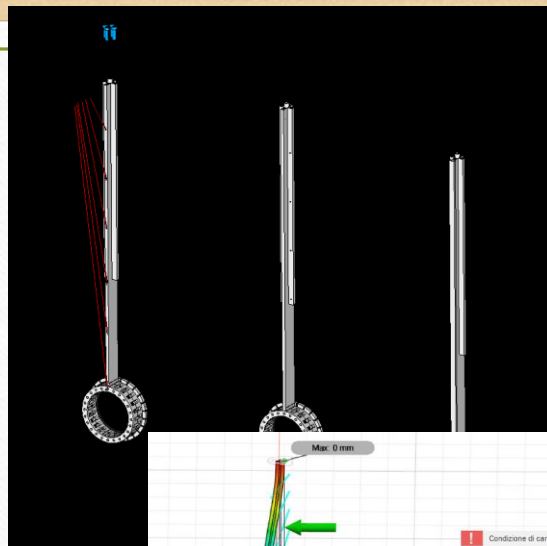
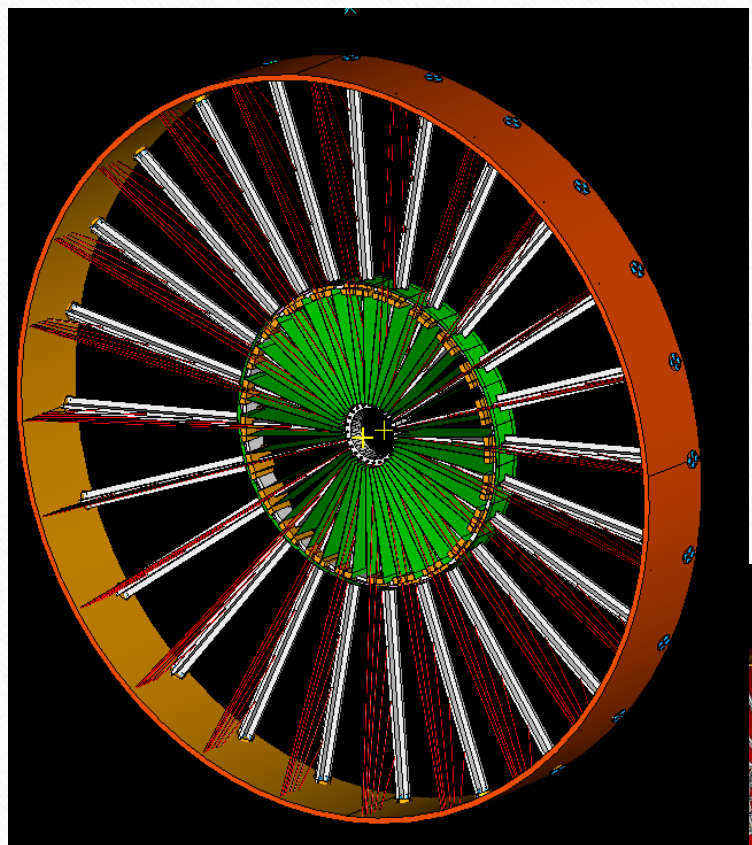
The pierced spoke

It will be inserted inside the inner cylinder

It will be fixed with a tiny pin

The gap is 1 mm thick





Just by adding symmetry reduces to 2.2 mm deflection

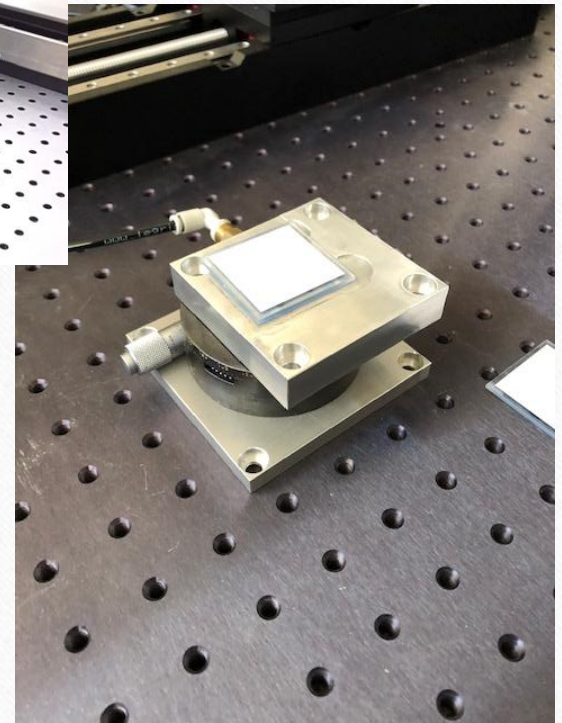
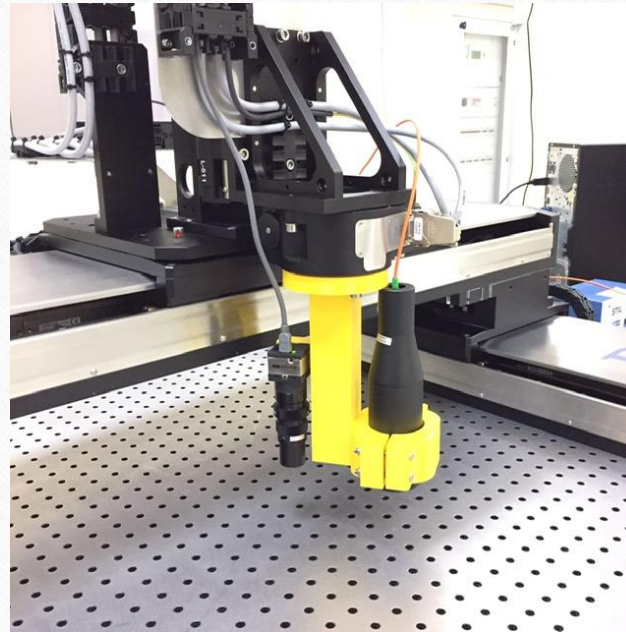
Single tie-rod at inner radius loaded with 450 N at 10°: max deflection < 300 μm

Three tie rods loaded with : 140 N at 10°, 240 N at 14°, 200 N at 21°: max deflection < $\pm 25 \mu\text{m}$

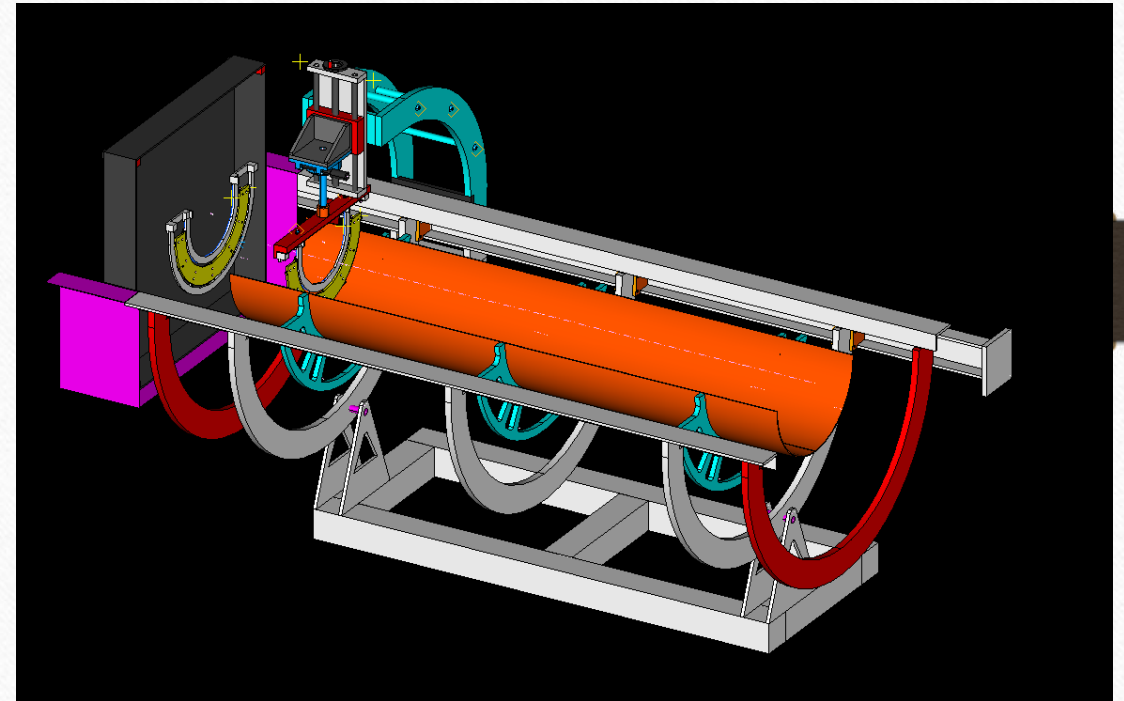
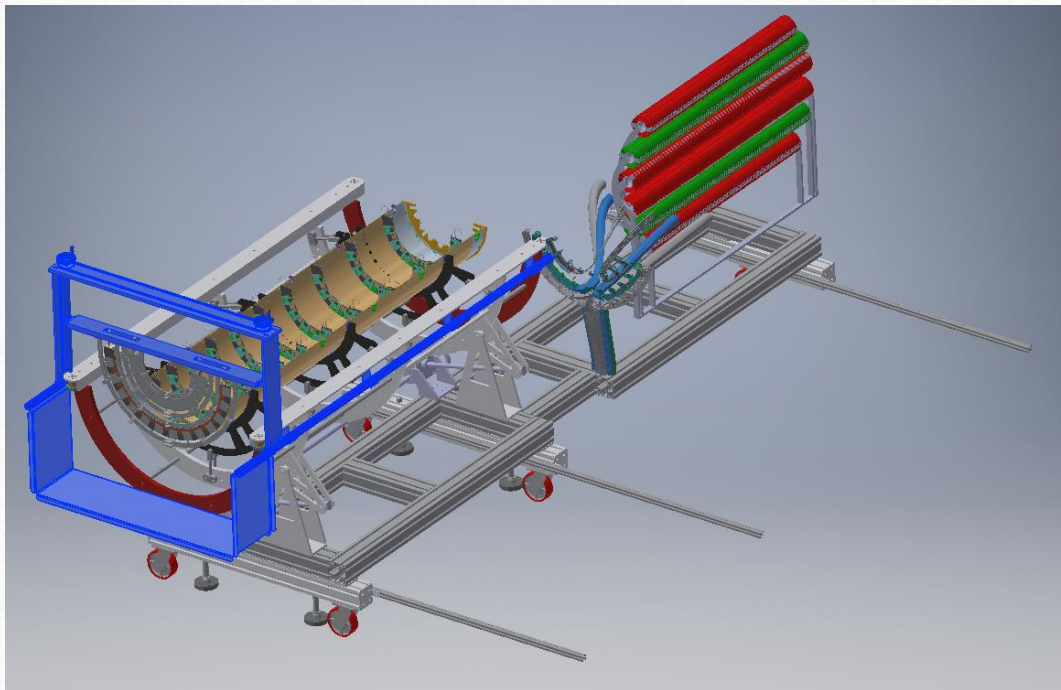
CleanRoom



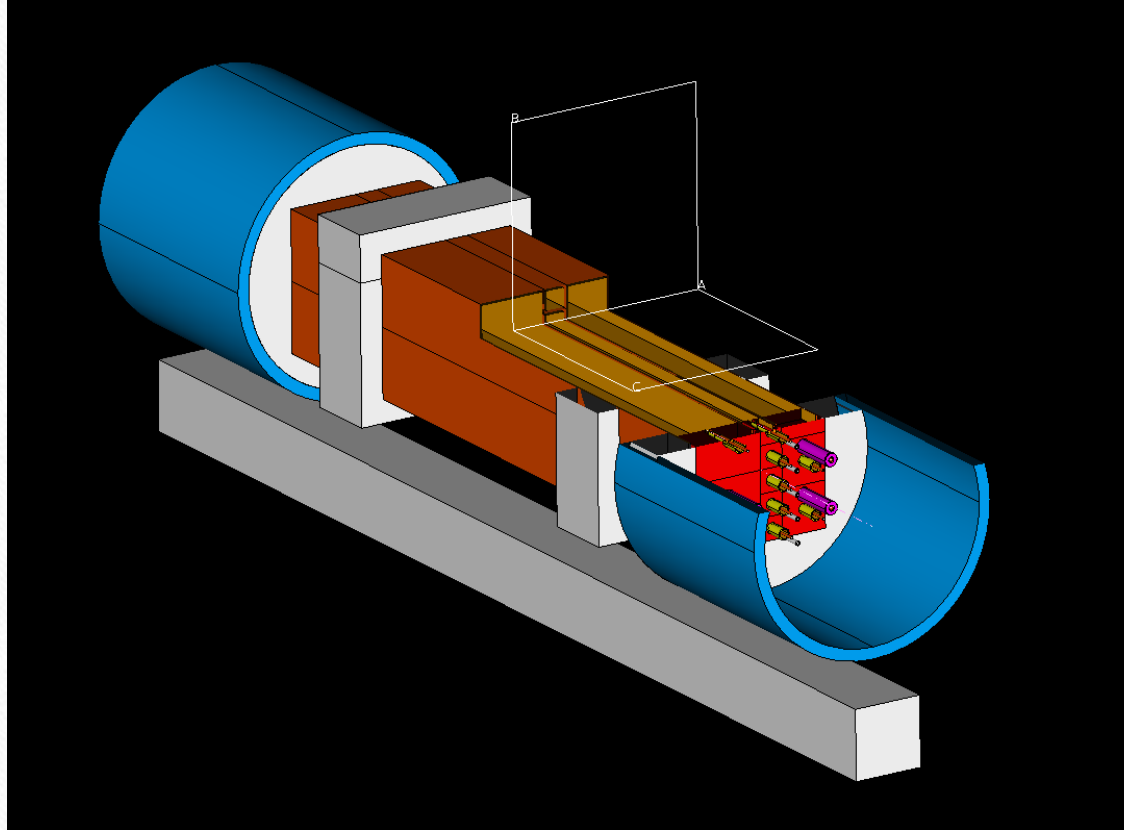
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Sistema movimentazione-integrazione moduli ITK



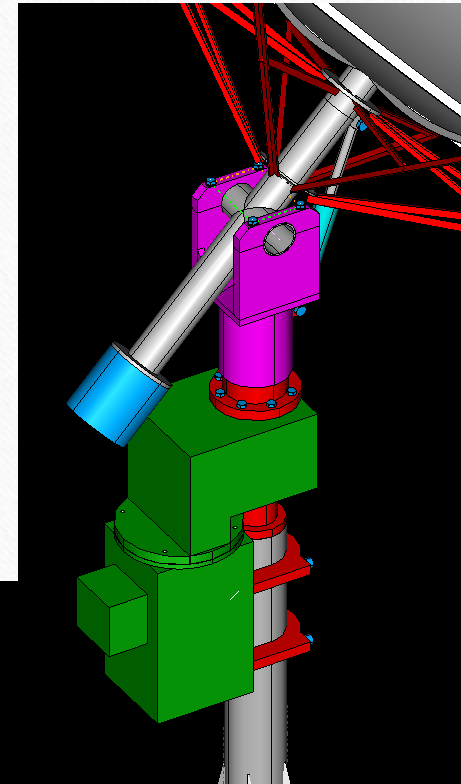
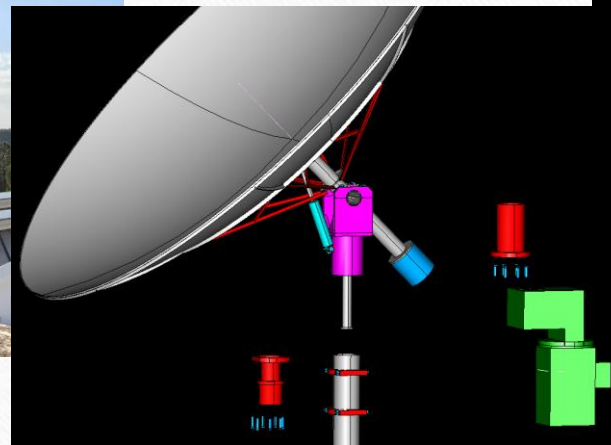
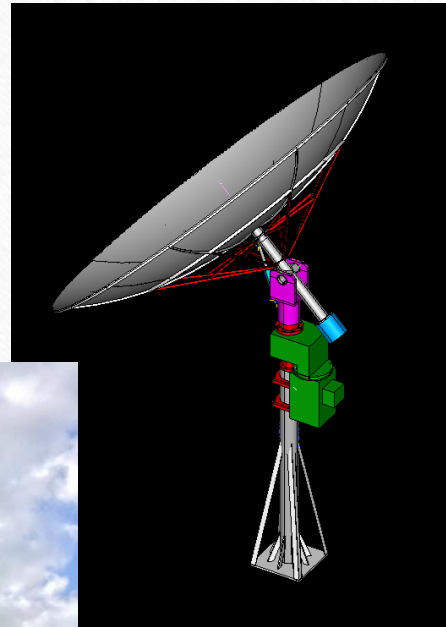
Test beam



Cosmic Ray



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Richieste 2021-2022

- Sostituzione riga ottica asse X fresatrice Zeus: 600 E;
- Sostituzione riga ottica asse Y fresatrice Zeus: 565 E;
- Utensileria : 1000 E;
- Foglio in Al handling Frame : 500 E;
- Guide lineari sistema movimentazione : 700 E;
- Slitte micrometriche : 1000 E;
- Materiale sistema motorizzazione antenna : 800 E;
- Fibra carbonio drift chamber : 500 E;

~ 6000 E



Articolo	Descrizione	UM	Quantità	Valore unitario	Sc%	Imponibile
OPTIKA1100010	RIGA OTTICA mm.825 Corsa Utile OPTIK A +	PZ	1,00	660		660,00
	CAVO MT.5 RIS.10um FAGOR					
GT50800	RIGA GT5 MM.800 RIS. 5um Fagor	PZ	1,00	565		565,00
N1512200204G1125	INSERTO N151.2-200-20-4G 1125	PZ	10,00	14,5	15	123,25
N1512200204GH13A	INSERTO N151.2-200-20-4G H13A	PZ	10,00	11,65	15	99,03

Missioni

	Alex		Angelo		Giorgio	
	Cern	FermiL	Cern		Cern	FermiL
Settembre	1		1			
Ottobre	1+1		1		1	
Novembre	1+1		1		1	
Dicembre	1				1	
2022	6				6	
2022 Fermilab		2				2