

Summary

- Activities summary 2024
- Anagrafica 2025.
- Pisa activities 2025 .
- Conclusions.

Activities summary 2024.

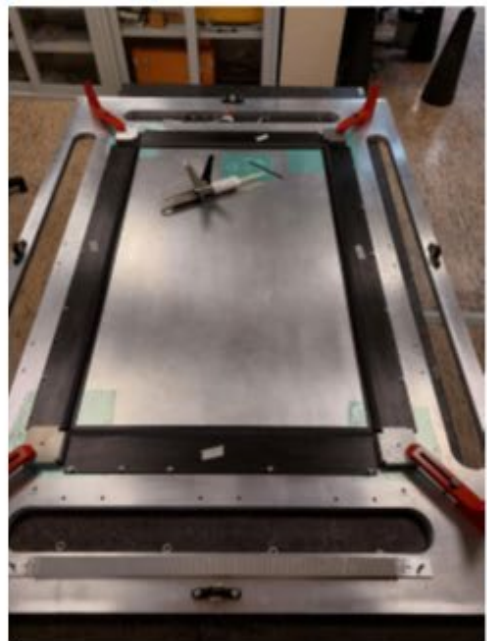
Pisa group had two main commitments:

- Supply the tooling and support the dismount activities for the Kloe Calorimeter.
- Construction of two straw prototypes 1200x800mm to address all the problematics of this technical choice.

The calorimeter has been dismounted.

One straw prototype has been build at CERN with the contribution of other institutions. Pisa has supplied the carbon fiber support frame, all parts and all tooling to assemble the detector.

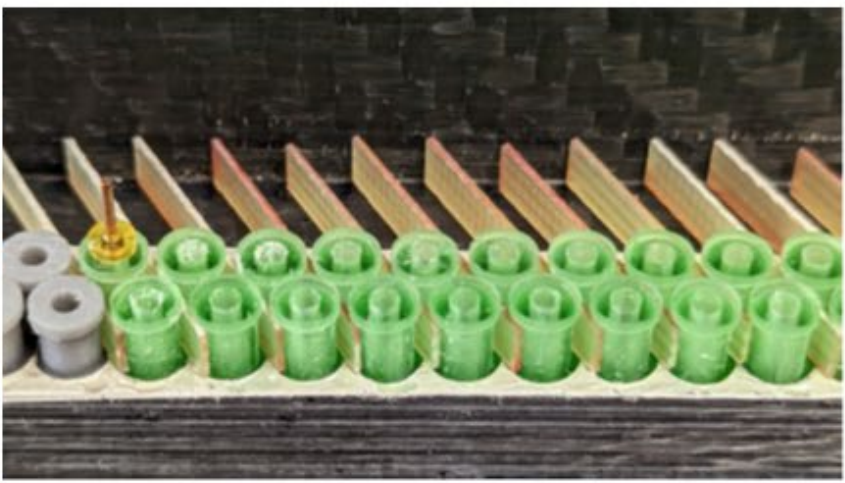
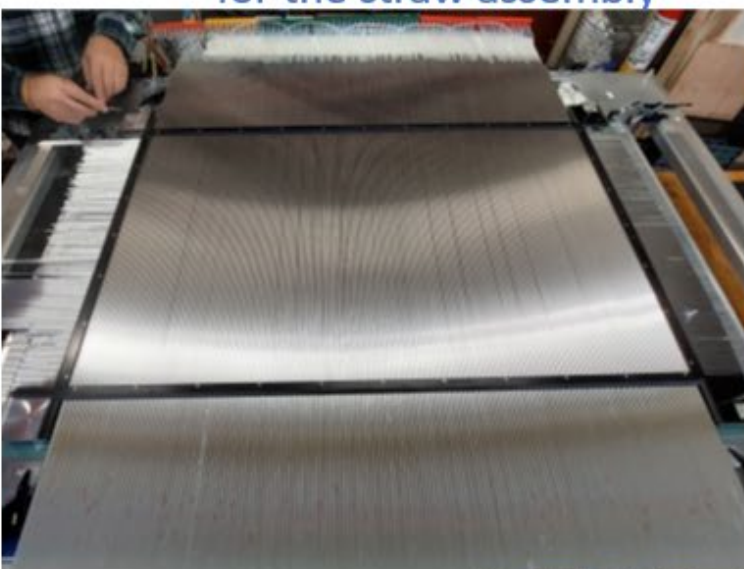
6. Construction phases of a scaled prototype 1200x800mm



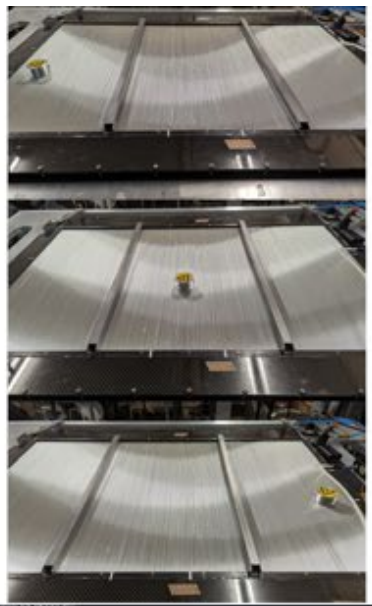
1. Gluing a Supporting frame



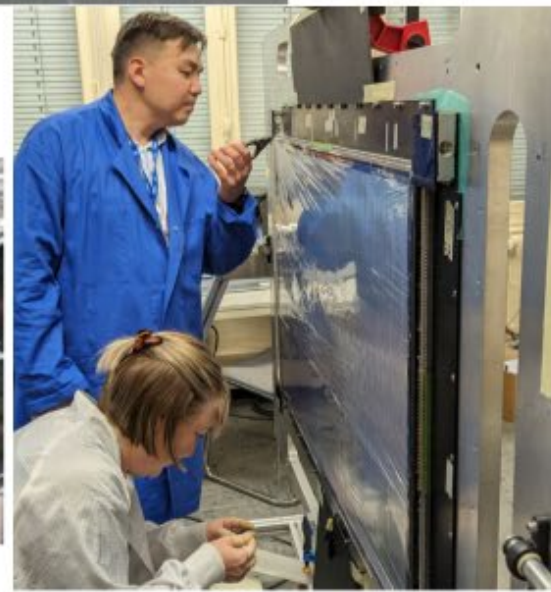
2 bar pressure are used for the straw assembly



4. End plug insertion (End Plug are temporarily locked for wire inserti



3. Straw are cutting.



5. Wiring. (in vertical position)



6. Final sealing with stycast Glue.(vertical position)

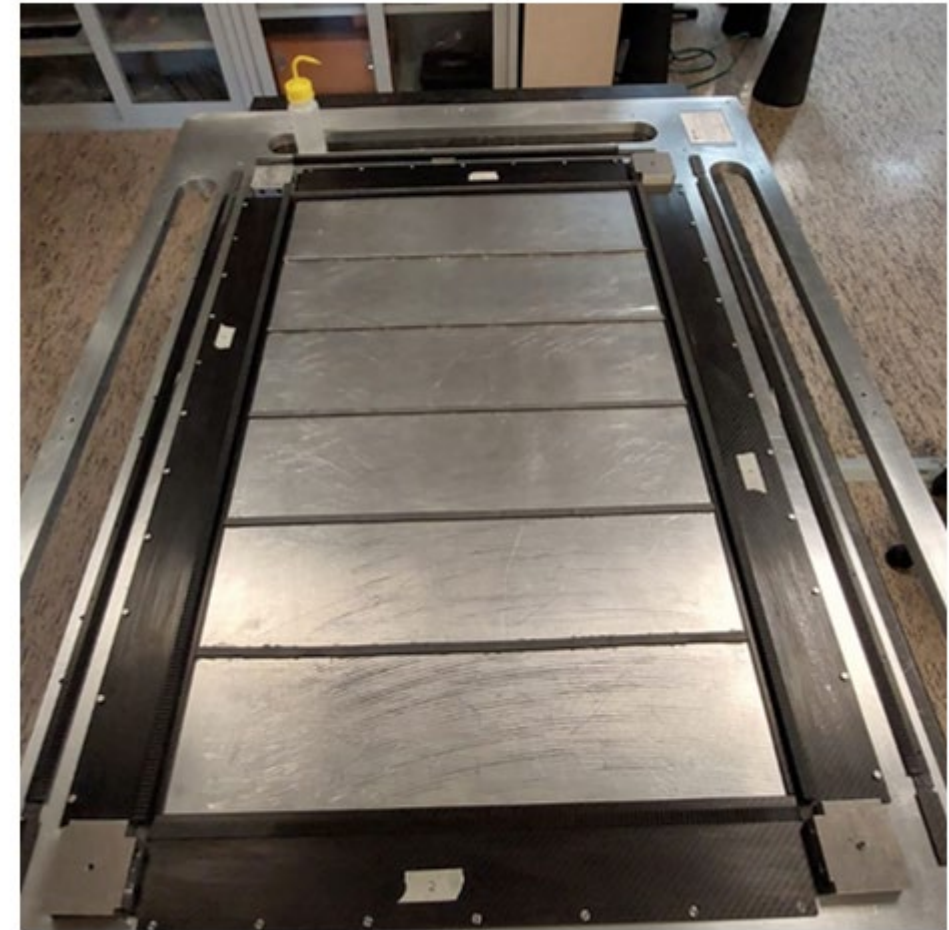
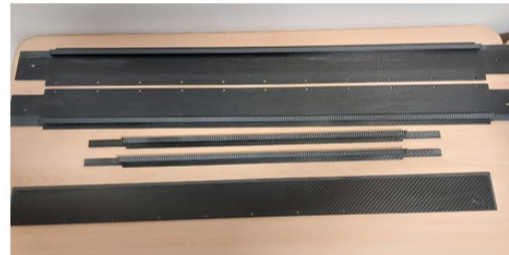
Ar/CO₂ 70/30
HV = 1,450 V
⁵⁵Fe source
Threshold 200 ADC
Rate 510 Hz

The assembled prototype is tested with a ⁵⁵Fe source



Preparation for Second prototype at Pisa

Carbon fiber parts at Pisa



First prototype at CERN

Activity summary 2024.

The second prototype will be completed in the 2024 and it will address other issues of the straw detector construction.

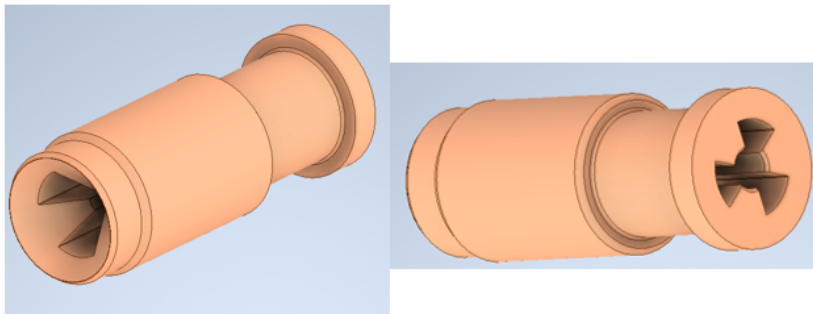
Goals for the new prototype(1200x800mm)

In the new prototype we would like to test the insertion of the wire spacer.

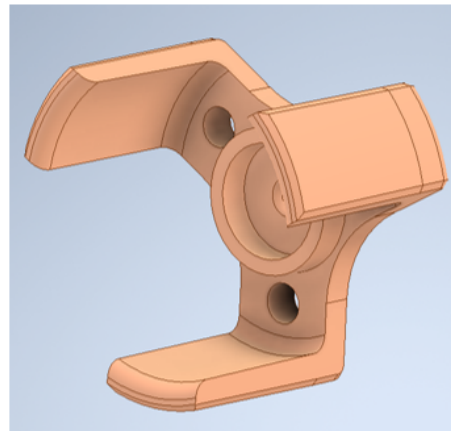
This operation it was not tested yet in real condition in which the straw are pre-tensioned.

This time we are trying to have all materials in advance to be able to do the necessary adjustments.

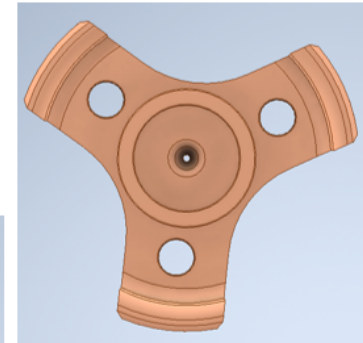
New pin and end plug are going to be tested.



End Plug



Spacer



Anagrafica Pisa 2025

Dune Pisa		FTE	
Fabrizio Raffaelli		0.40	Dir. Tecnologo INFN
Stefano di Falco		0.40	Ricercatore INFN
Franco Spinella		0.10	Prim. Tecnologo INFN
Elena Pedreschi		0.10	Tecnologo INFN
Simone Donati		0.10	Prof. associato UNIV Pisa
Valerio Giusti		0.20	Prof. associato UNIV Pisa
Luca Morescalchi		0.10	Ricercatore INFN Pisa
Riccardo Ciolini		0.10	Prof. associato UNIV Pisa
Saverio Mameli		0.80	Assegnista INFN
Giovanni Falcitelli		0.80	Associato Fisico
Giorgio Bellettini		0.00	Senior
	Totale	3.10	

Pisa activities 2025

Activities on the calorimeter.

1. Supply the documentation to allow the use of the calorimeter mounting tooling at Fermilab.
2. Refurbishing of the calorimeter supporting structure and modules.
3. Upgrade some details of the tooling.

Pisa activity 2025

Future straw activities.

The construction of the 80x120 cm prototype doesn't complete the work needed to validate the technical choice. Further activities include:

- 1) Test beam.
- 2) A full scale prototype is necessary to verify several things and to do the fine tune-up of the detector.
- 3) Functionality studies are necessary as well long term test on the full size prototype.

Conclusions.

Pisa richiede dei fondi di missioni per contribuire ai lavori sul calorimetro e i test beam degli straw.

Sulla attività future degli straw si può chiedere i fondi sub judice per la costruzione del prototipo full scale.

Lo sviluppo del progetto del tracciatore a straw richiede risorse aggiuntive in termini di man power e un organizzazione ben definita di assegnazione di compiti: frame in carbonio, tavolo ottico, gantry per incollaggio, wiring, elettronica, simulazioni termiche, sistema di gas, test di aging e di raffreddamento, test con e senza fascio, organizzazione logistica per produzione su larga scala.