



UNIVERSITÀ
DEGLI STUDI
DI TRIESTE



Dipartimento di
Fisica
Dipartimento d'Eccellenza 2023-2027



ELMA Project introduction: “Energy Loss Measurements with MAPS”

ELMA Workshop

10-11 September 2025 – Trieste (Italy)

A project and workshop funded by MAECI:



Ministry of Foreign Affairs
and International Cooperation

The ELMA project

- The funding call

- “... the Italian Ministry of Foreign Affairs and International Cooperation (MAECI) issues a call for joint project proposals, as a step towards establishing a science and technology agreement of broader scope between the two Governments... **to facilitate the access of Italian scientists to world-class large research infrastructures and large research centers located in Germany which provide enabling and unique scientific facilities...**”

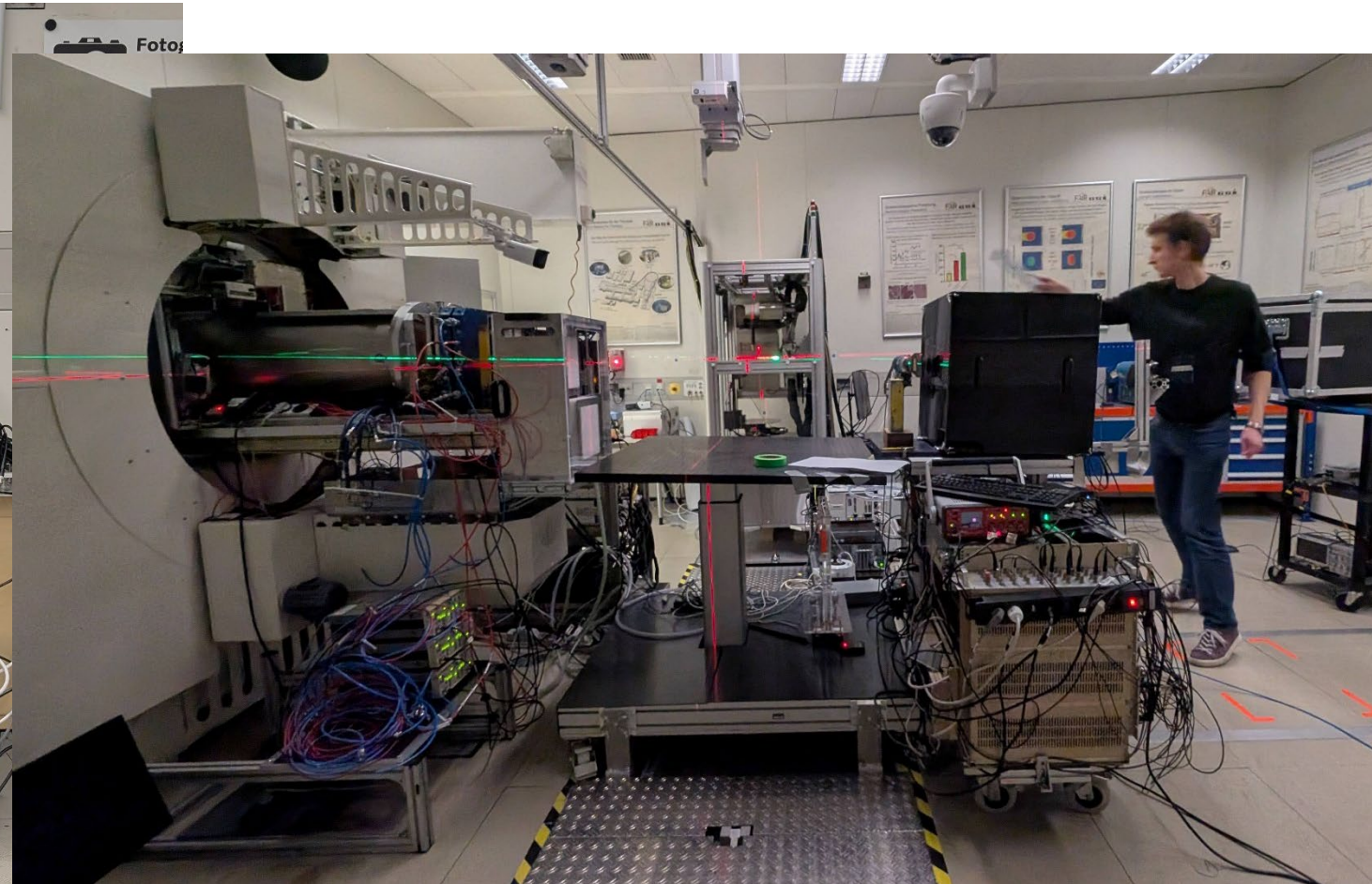
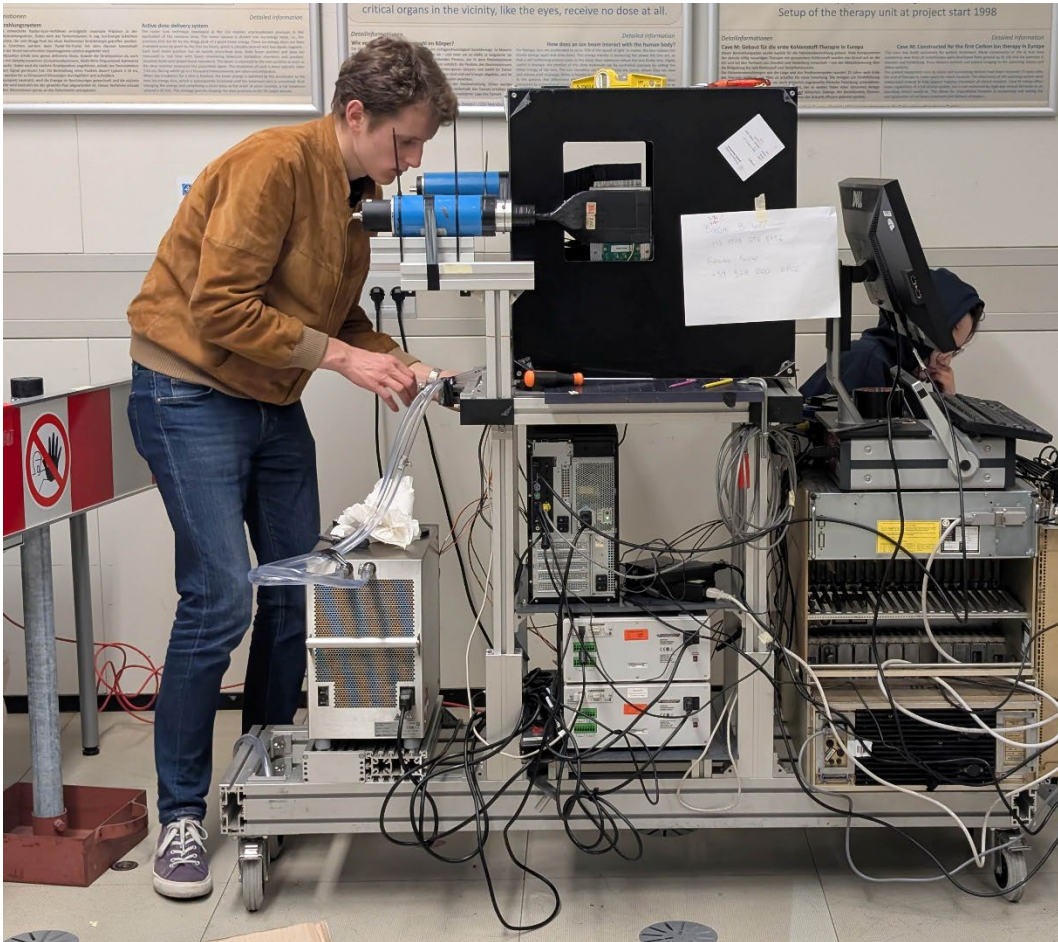
- The project goal

- “This proposal aims at enabling the exploitation of the MAPS technology for deposited energy measurements and particle identification”

- The partners

- Proponents: G. Contin *et al.*, **Department of Physics, University of Trieste**
- Partner Institution: S. Masciocchi *et al.*, **GSI – Helmholtz Center for Heavy Ion Research**

The ELMA testbeam (May 2025)



See Anna Villani's talk this afternoon: «Preliminary look at the energy response of ALICE ITS3 babyMOSSto a mixed Ion beam»

The ELMA Workshop



The ELMA Workshop



The ELMA Workshop – Wed. September 10th

WEDNESDAY 10 SEPTEMBER		
12:00 → 14:00	Registration	
14:00 → 14:15	Welcome and introduction	
Convener: Giacomo Contin (Istituto Nazionale di Fisica Nucleare)		
14:00	Welcome - from the Director of the Physics Department	5m
Speaker: Giuseppe Della Ricca (Istituto Nazionale di Fisica Nucleare)		
14:05	Welcome - from the Director of INFN Trieste	5m
Speaker: Valter Bonvicini (Istituto Nazionale di Fisica Nucleare)		
14:10	Introduction to the Workshop	5m
Speaker: Giacomo Contin (Istituto Nazionale di Fisica Nucleare)		
14:15 → 15:50	Technologies	
Conveners: Laura Gonella (Istituto Nazionale di Fisica Nucleare), Paolo Camerini (Istituto Nazionale di Fisica Nucleare)		
14:15	The Monolithic Active Pixel Sensor (MAPS) technology	25m
Speaker: Miljenko Suljic (TS)		
14:45	Perspectives for energy measurement implementation in MAPS design	20m
Speakers: Giacomo Ripamonti (CERN), Giulio Borghello (CERN)		
15:10	Energy response of MAPS designed at C4PI	20m
Speaker: Maciej Kachel (IPHC)		
15:35	Energy response of Monopix sensor series	15m
Speaker: Lars Schall		
15:50 → 16:20	Coffee break	30m

16:20 → 17:00	Technologies	
Convener: Laura Gonella (Istituto Nazionale di Fisica Nucleare)		
16:20	Perspectives for energy measurements with MALTA	15m
Speaker: Dumitru Vlad Berlea		
16:40	Energy response of the ATLASPIX3 HVCMOS sensor	15m
Speaker: Beatrice Cervato (Istituto Nazionale di Fisica Nucleare)		
17:00 → 17:40	Measurements	
Convener: Dr Serhiy Senyukov (Institut Pluridisciplinaire Hubert Curien)		
17:00	X-ray fluorescence measurements in the 1 keV - 43 keV energy range with large-scale 65 nm CMOS sensor prototypes for ALICE ITS3	15m
Speaker: Giovanni Vecil (Istituto Nazionale di Fisica Nucleare)		
17:20	Preliminary look at the energy response of ALICE ITS3 babyMOSSto a mixed Ion beam	15m
Speaker: Anna Villani (Istituto Nazionale di Fisica Nucleare)		
17:40 → 18:05	Applications	
Convener: Dr Serhiy Senyukov (Institut Pluridisciplinaire Hubert Curien)		
17:40	DUMBO: a 2D imaging beta detector based on ALPIDE chips for radiopharmaceutical applications	20m
Speaker: Davide Serafini (University of Siena & INFN-LNL)		
20250910_elma_v2...		
18:05 → 18:30	First day wrap-up	25m
Speaker: Giacomo Contin (Istituto Nazionale di Fisica Nucleare)		
19:30 → 22:00	Social Dinner - La Bottega di Trimalcione	2h 30m
Via del Lazzaretto Vecchio, 3, 34123 Trieste TS		

The ELMA Workshop – Thu. September 11th

THURSDAY 11 SEPTEMBER

09:00 → 10:20 Applications
Conveners: Ralf Hendrik Menk (INFN), Dr Serhiy Senyukov (Institut Pluridisciplinaire Hubert Curien)

09:00 Energy-Sensitive Detectors in X-ray Imaging: Technologies and applications
Speaker: Vittorio Di Trapani (Istituto Nazionale di Fisica Nucleare) 25m

09:30 The Bergen proton CT project
Speaker: Biro Gabor (HUN-REN Wigner Research Centre for Physics) 20m

09:55 MAPS applications in RGS and Compton Chamber
Speaker: Triloki Triloki (INFN Bari Italy) 20m

10:20 → 10:50 Coffee break 30m

10:50 → 11:55 Applications
Conveners: Miljenko Suljic (TS), Ralf Hendrik Menk (INFN)

10:50 On-satellite particle tracking and identification with MAPS sensors
Speaker: Ester Ricci (Istituto Nazionale di Fisica Nucleare) 20m

11:15 AstroPix
Speaker: Anna Driutti 15m

11:35 The ARCADIA Depleted Monolithic Active Pixel: X-ray characterization and industrial applications
Speaker: Sabrina Ciarlantini (Istituto Nazionale di Fisica Nucleare) 20m

11:35 → 13:00 Measurements
Conveners: Miljenko Suljic (TS), Paolo Camerini (Istituto Nazionale di Fisica Nucleare)

11:55 dE/dx with hybrid pixels in ATLAS
Speaker: Simone Ravera (Istituto Nazionale di Fisica Nucleare) 15m

12:15 Particle identification with MAPS in ALICE (TBC)
Speaker: Giorgio Alberto Lucia (PoliTO) 15m

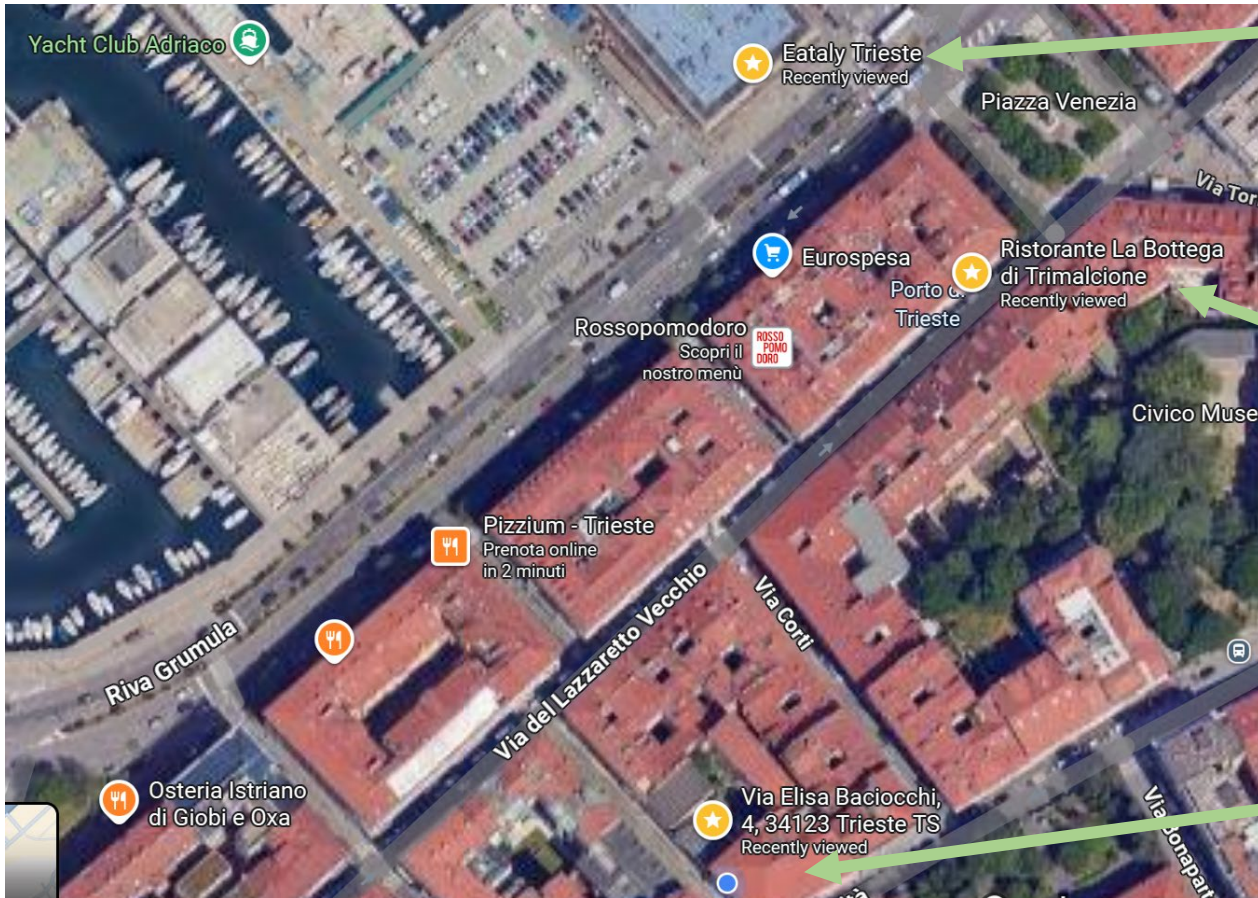
12:35 PID with ALICE 3 trackers using Time-over-Threshold (TBC)
Speaker: Henrik Friert (Technische Universität München - TUM) 15m

13:00 → 13:30 Wrap-up discussion 30m

13:30 → 15:00 Lunch - La Barcaccia, presso Eataly 1h 30m
Direct link to this item
Riva Tommaso Gulli, 1, 34123 Trieste TS

15:00 → 18:00 Miramare Castle tour (self-guided)

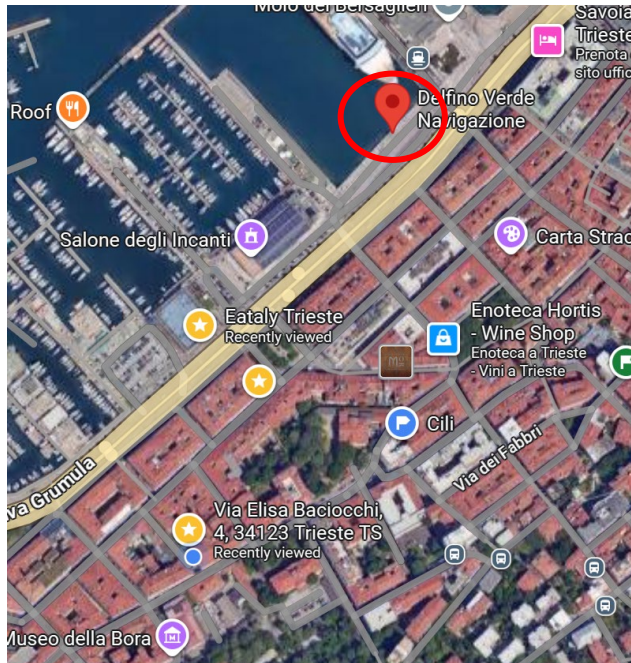
ELMA Social Events



- Thursday's lunch: Eataly (La Barcaccia)
 - Riva Tommaso Gulli, 1
- Wednesday's dinner: La Bottega di Trimalcione
 - Via Lazzaretto Vecchio, 3
- ELMA Workshop
 - Androna Baciocchi, 4

Thursday suggested activity

- The weather is not going to be great, but you might still enjoy a ferry boat trip to the Miramare Castle on Thursday afternoon!
 - 35' ferry trip to Grignano (departure at **15.30 from the waterfront**) to enjoy an amazing view of the city from the sea and visit the Miramare Castle and Park. Returning to the city is possible via ferry or via bus.



Some more instructions – Please:

- Upload your slides before the start of the session
 - Select the protection level you wish for your file!
- Let us know if you changed your plans for the social dinner!
- Enjoy the Workshop!
- Stay in touch!