AMS Perugia Activity

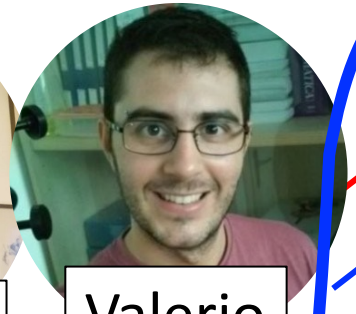
PERUGIA TEAM

DATA ANALYSIS

L0 UPGRADE

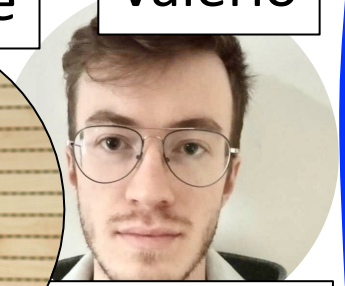

Nicola


Emanuele


Valerio

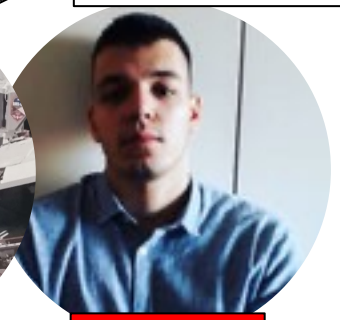

Federico


Pauli


Francesco


Miguel


Claudio


David


Bruna


Matteo


Maura


Jiang


Alessio


Giovanni


Mattia


Maria


Lorenzo


Mirco


Gianluca

PERUGIA TEAM

DATA ANALYSIS

L0 UPGRADE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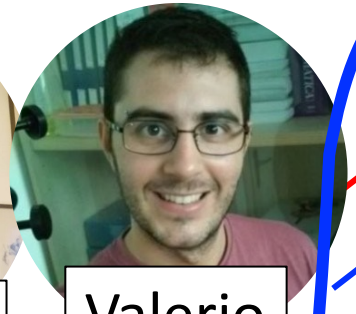
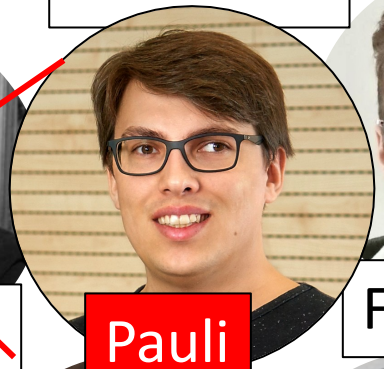
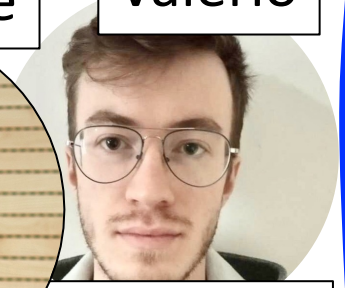
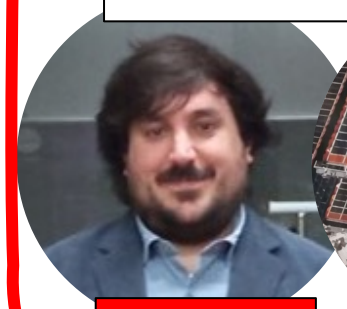

Valerio

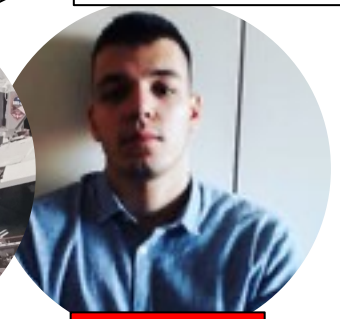

Federico


Pauli


Francesco


Miguel


Claudio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Bruna


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Maura


Jiang


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Giovanni


Mattia


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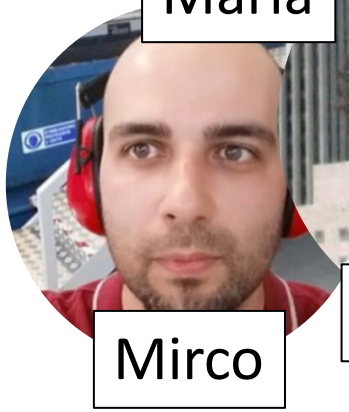
Lorenzo


Mirco


Gianluca

“New” entries…

PhD
Bachelor thesis(@Perugia):
"Characterization of the silicon sensors and front-end electronics of AMS-L0"
→ **Will work on L0 Upgrade & Low Energies**

Post-Doc
Phd thesis (@Lisbona):
"Study of solar modulation effects on cosmic ray fluxes measured by the AMS experiment".
→ **Will work on Low Energies**

PhD
Bachelor thesis(@Perugia):
"A numerical model for the transport of cosmic rays in the heliosphere."
→ **Will work on Low Energies**

Post-Doc
PhD Thesis (@Oulu):
"Validation of neutron monitor data for studies of cosmic ray modulation"
→ **Will work on Low Energies**

POCC Operations

TRACKER	Duties
Giovanni Ambrosi	Coordinamento operazioni Tracker
Matteo Duranti	Tracker Expert
Maura Graziani	Tracker Expert
Lorenzo Mussolin	UTTPS Expert

SHIFT	Duties (@remote & @CERN)
TEE	Monitoring di Tracker, TRD, ACC

“Low Energies” analysis

- **Electrons**

Bruna Bertucci, Maura Graziani

- **Protons**

Francesco Faldi, Nicola Tomassetti, Bruna Bertucci, Miguel Orcinha, Pauli Kalervo

- **Nuclei**

Federico Donnini → Alessio Ubaldi, Maura Graziani

- **Real Time Monitoring**

Francesco Faldi, Valerio Vagelli

- **Theoritical models**

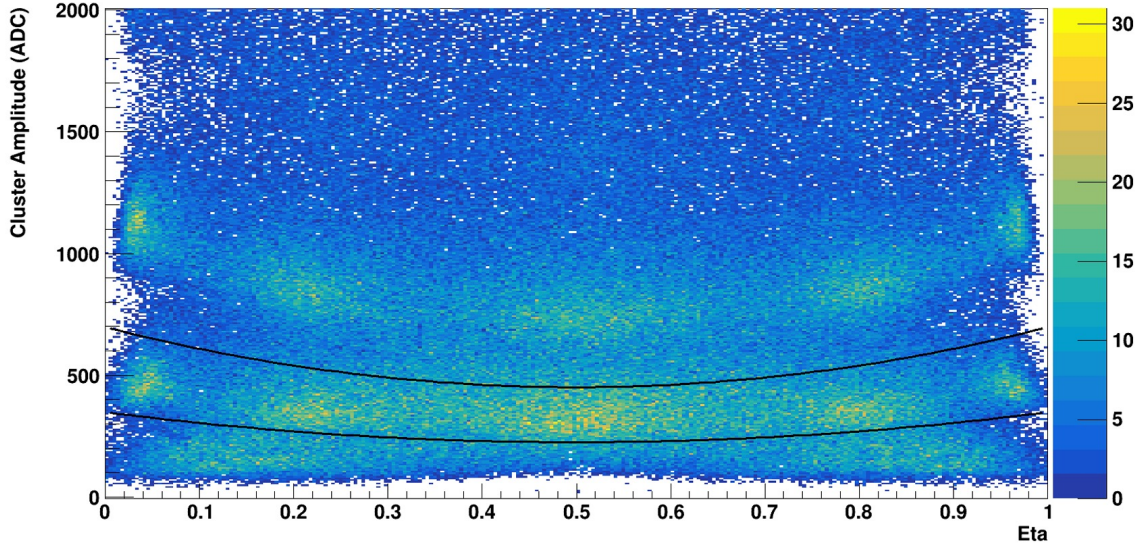
Nicola Tomassetti, Emanuele Fiandrini, Pauli Kalervo

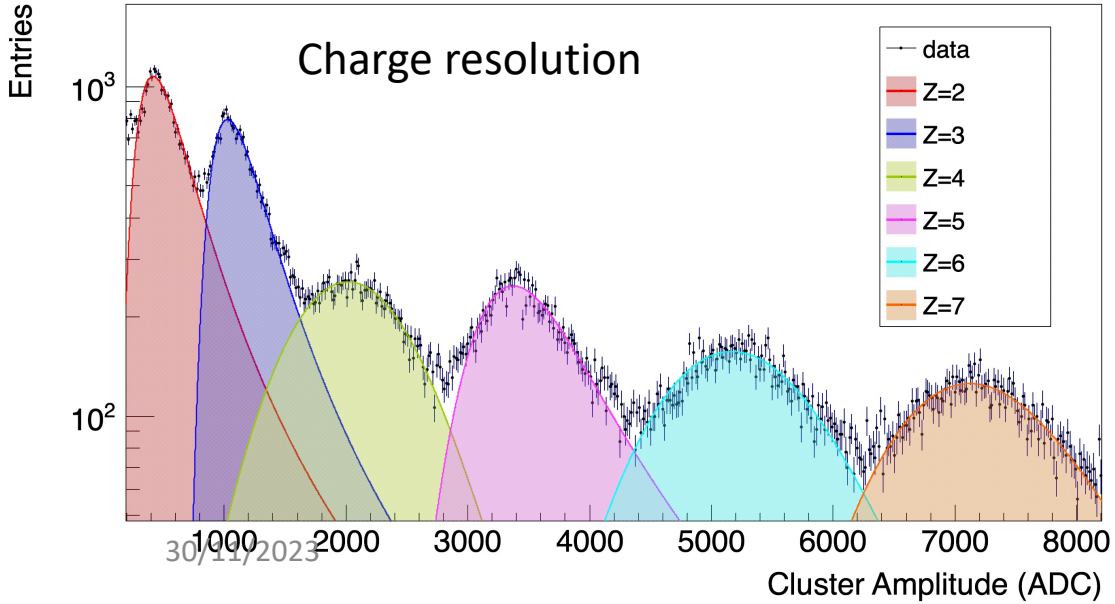
L0 Upgrade analysis

Matteo Duranti, Maura Graziani, Alessio Ubaldi, Jiang Yaozu

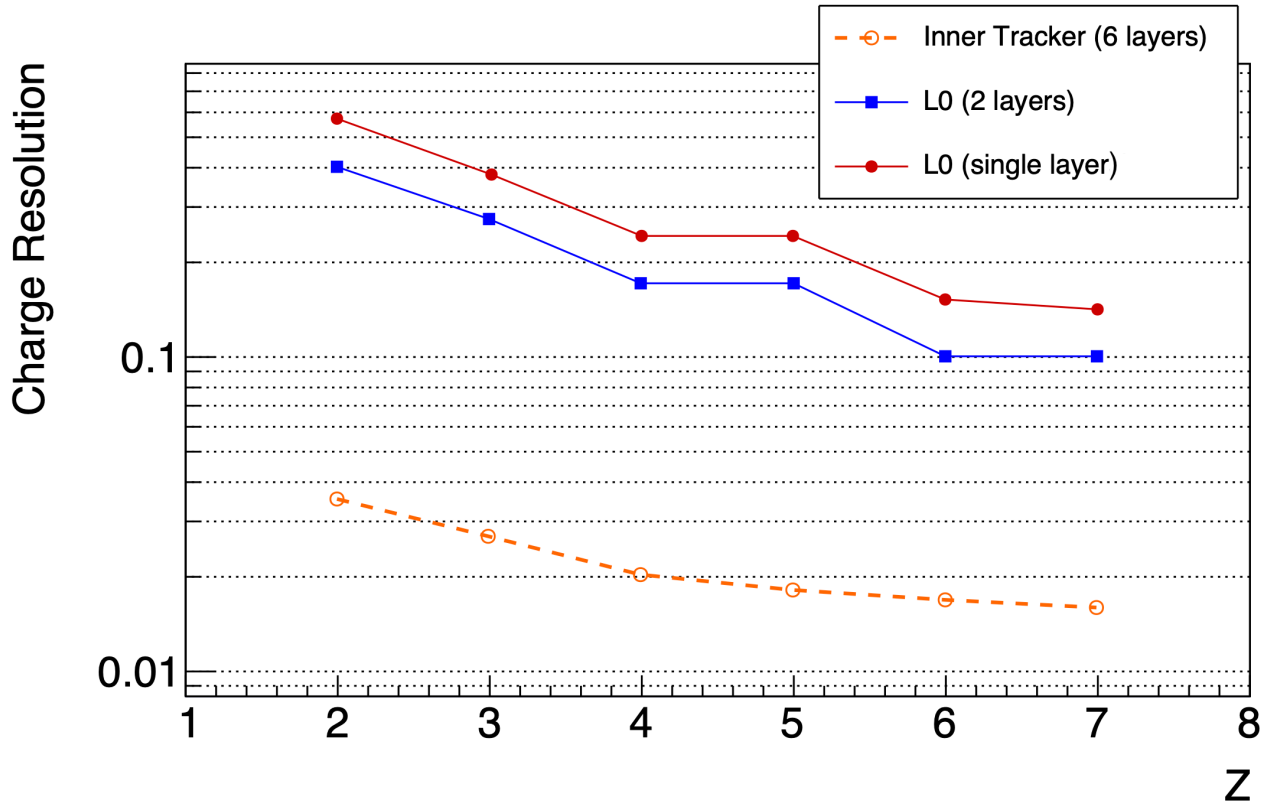
L0 Upgrade analysis

Signal correction for Impact point





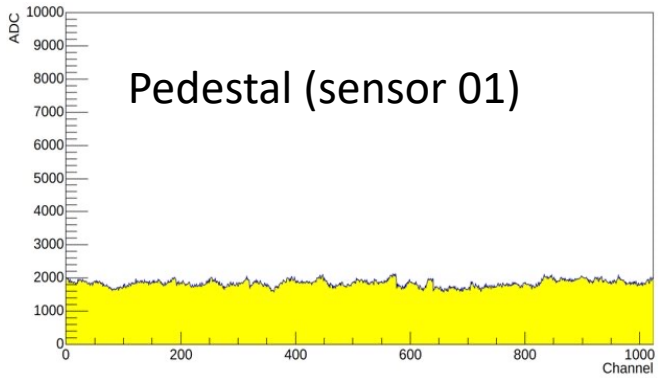
Alessio's work

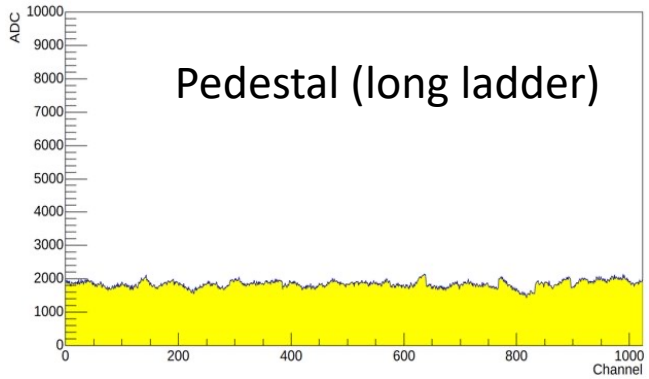


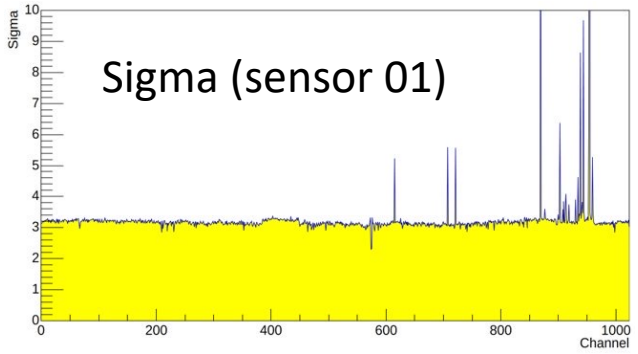
Note: Beam Test 2022

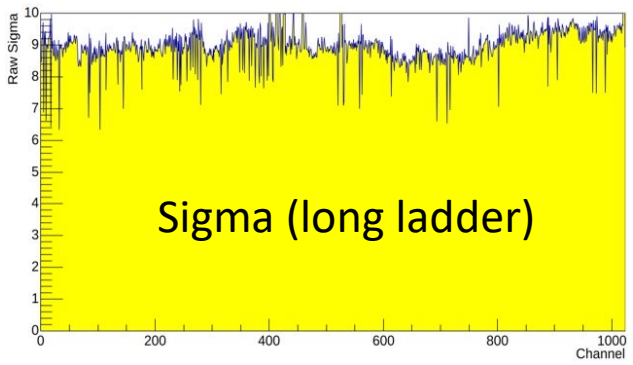
L0 Upgrade analysis

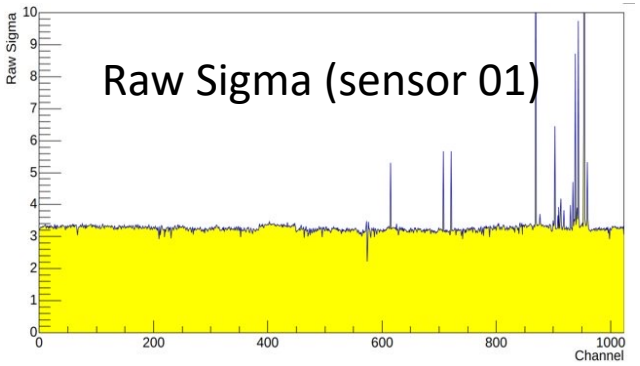
Sensor Calibration

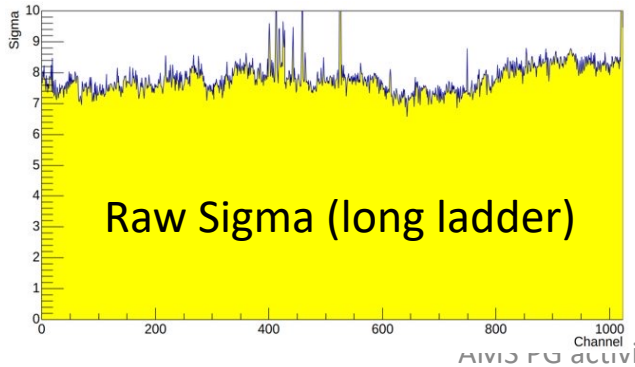






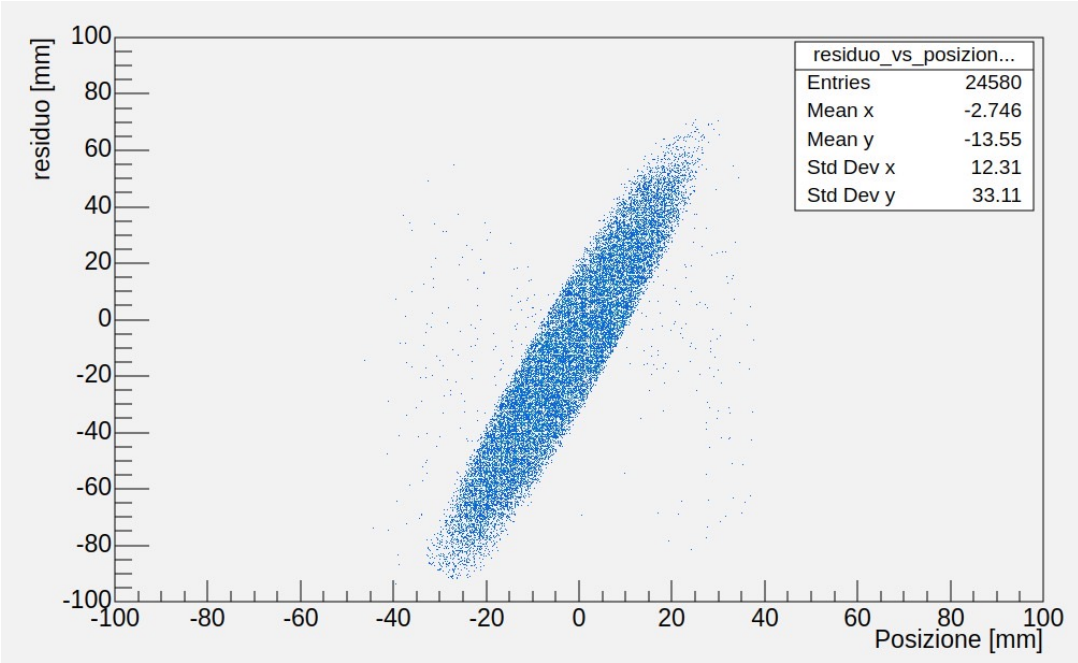






Jiang's work

Tracker alignment (@45°)



Note: Beam Test 2023

Situation @September 2023

“Low Energies” analysis – Monthly nuclei

Federico Donnini (+ Valerio Formato from ROMA)

Analyzed data:

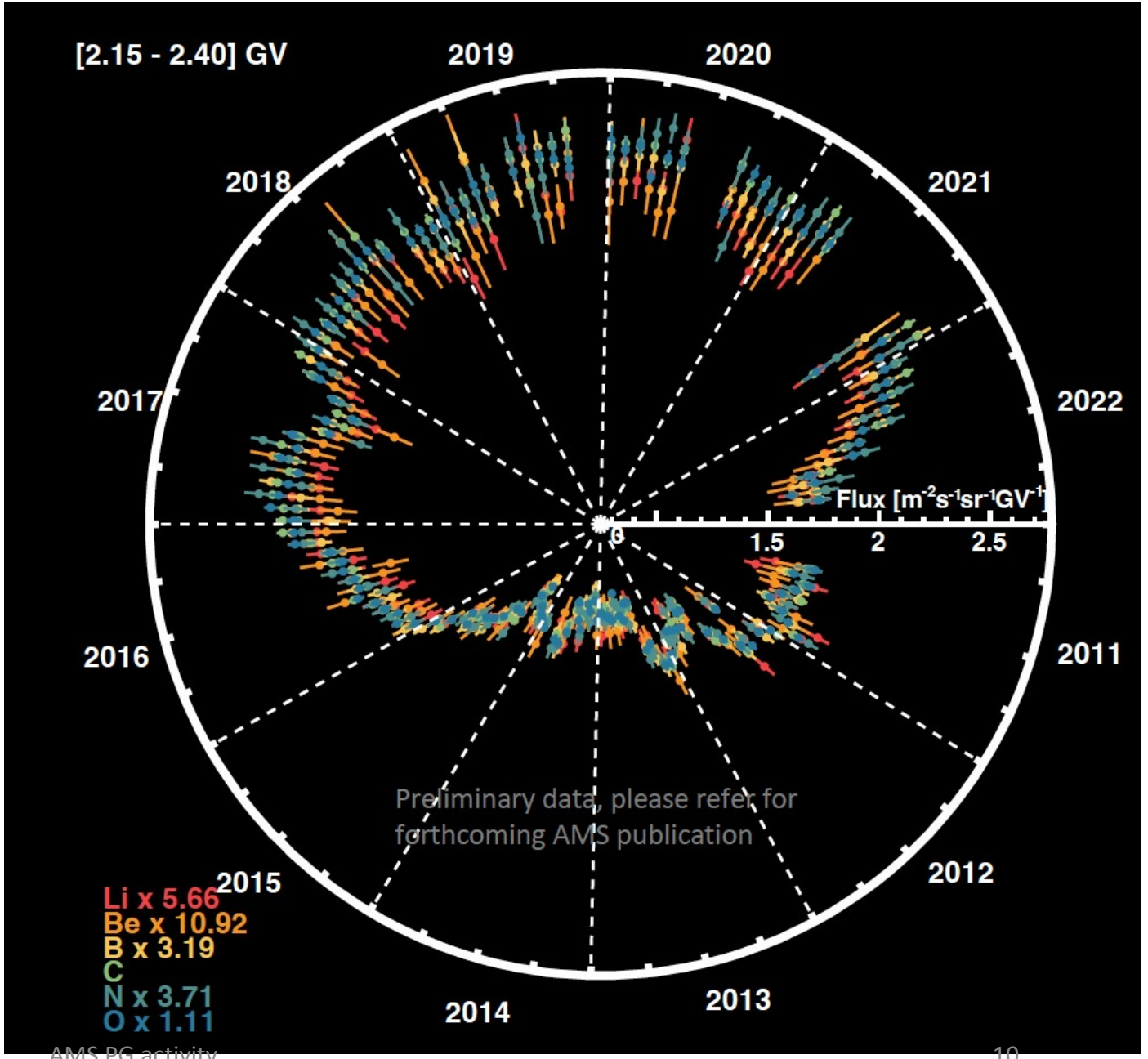
Pass8 (May 2011 – Nov 2022), Based on NAIA DST

Analysis almost completed…

→ Evaluation of systematic errors is ongoing

→ **Cross check** with Bologna and MIT group is ongoing

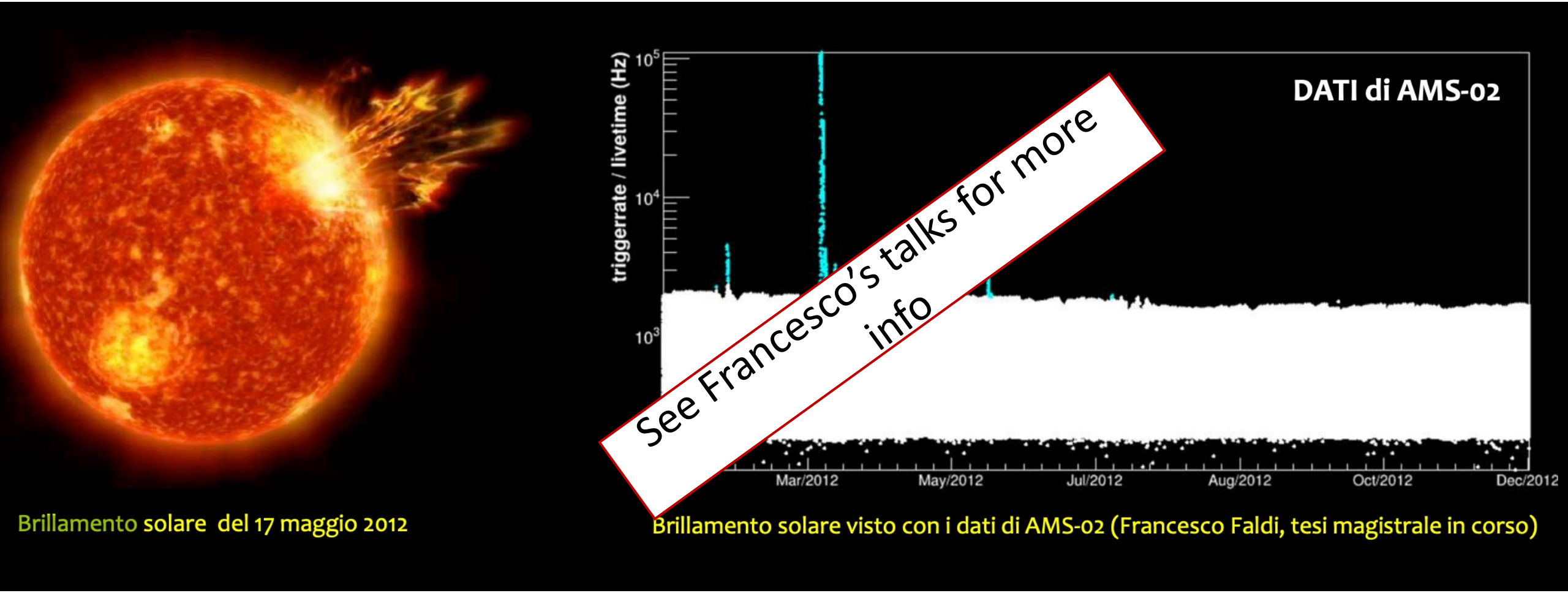
In the next future…Alessio and Maura will work on it



"SEP Alert" alghoritm

Space wheater

- Radiatio risk evaluation during space missions, for satellite and for telecomunications
- Possibility of a real time monitoring



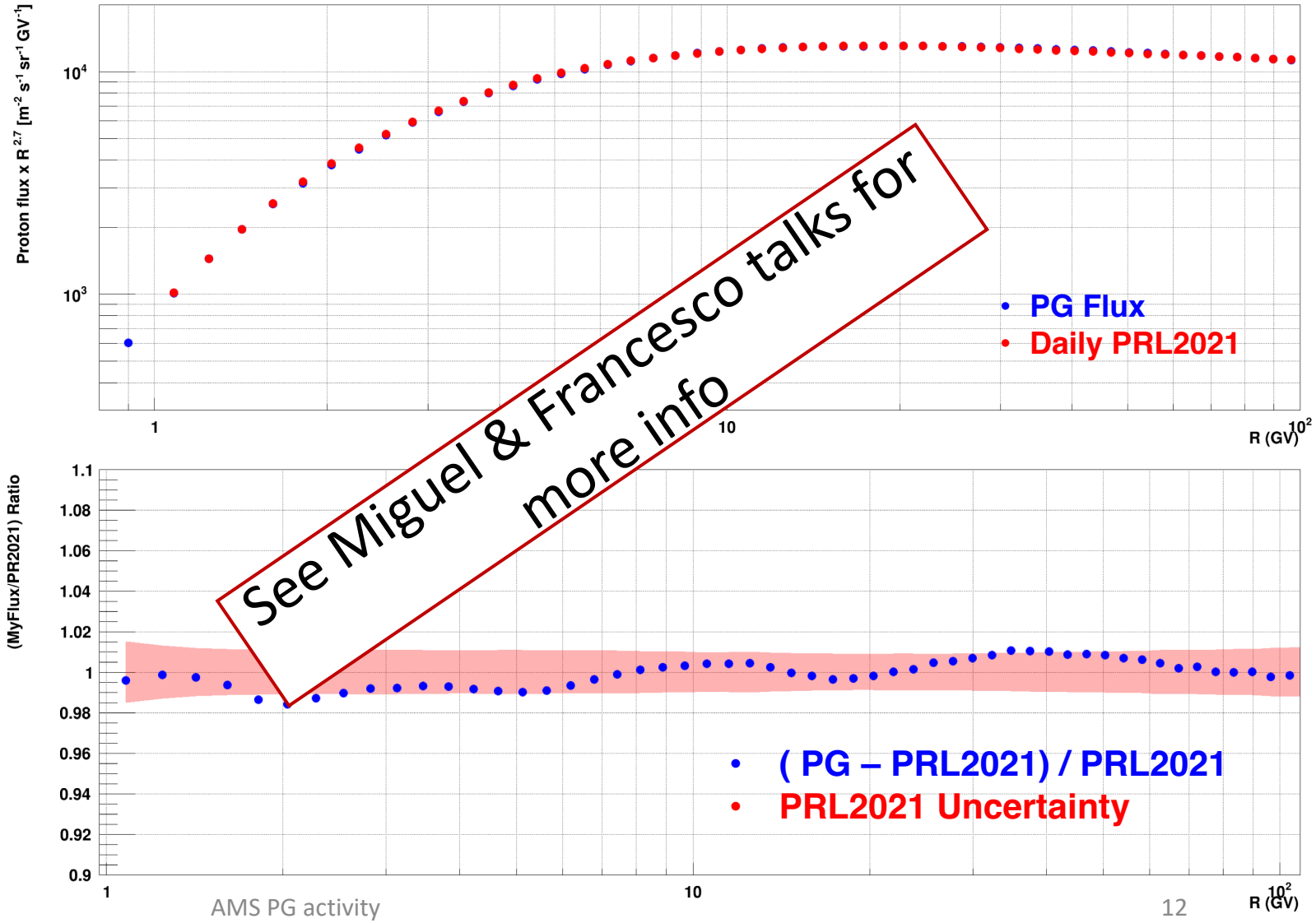
Brillamento solare del 17 maggio 2012

Brillamento solare visto con i dati di AMS-02 (Francesco Faldi, tesi magistrale in corso)

“Low Energies” analysis – Daily

Francesco Faldi, Nicola Tomassetti, Bruna Bertucci, Miguel Orcinha

- **Pass8, 7-year flux** (19/05/2011 – 28/05/2018)
- **Inner + Layer 1** Fiducial Volume
- Track fit type: Yi Jia; Charge reconstruction type: GBL
- Based on NAIA DST



L0 Upgrade activities

Giovanni Ambrosi, Matteo Duranti, Mattia Barbanera, Maria Movileanu, Lorenzo Mussolin, Mirco Caprai,Gianluca Scolieri, Maura Graziani, Jiang Jaozu, Alessio Ubaldi

2023

- 2022 TB data analysis → **DONE**
- Ladders integration @SERMS (TERNI) → **ONGOING**
- Vibration and termovacuum tests @SERMS (TERNI) → **ONGOING**
- TEST BEAM @CERN in August→ **DONE**
- TEST BEAM @CERN in October → **DONE**
- 2023 TB data analysis → **ONGOING**
- Software development → **ONGOING**

See Giovanni's talk for more info

2024

- Integration and testing of a whole plane