



Analisi in corso e analisi future per EEE e polarquEEEst

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Ongoing and planned/possible analyses

EEE

- Long distance correlation with multi-track events
- ...

polarquEEEst

- Geomagnetic effect on the cosmic-ray flux measured by polarquEEEst
- Detector performance over a large data acquisition period @ Svalbard
- Seasonal effect on the cosmic-ray flux @Svalbard

Long Distance Correlations



Goal: extending previous results using multi-track events to select EAS events

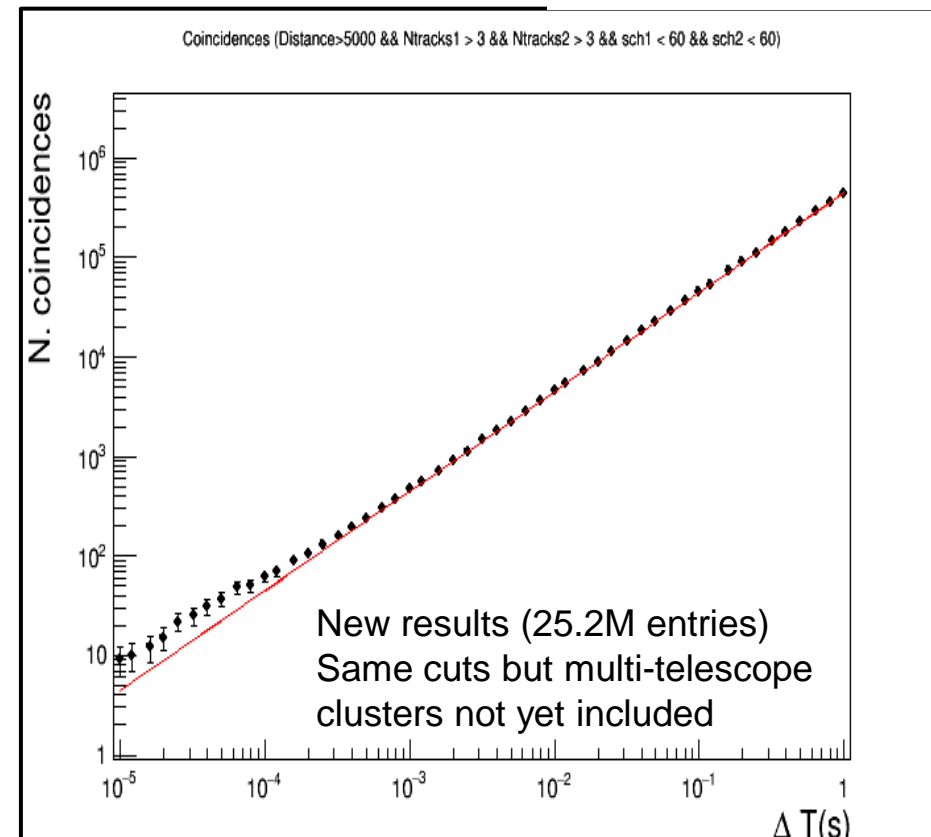
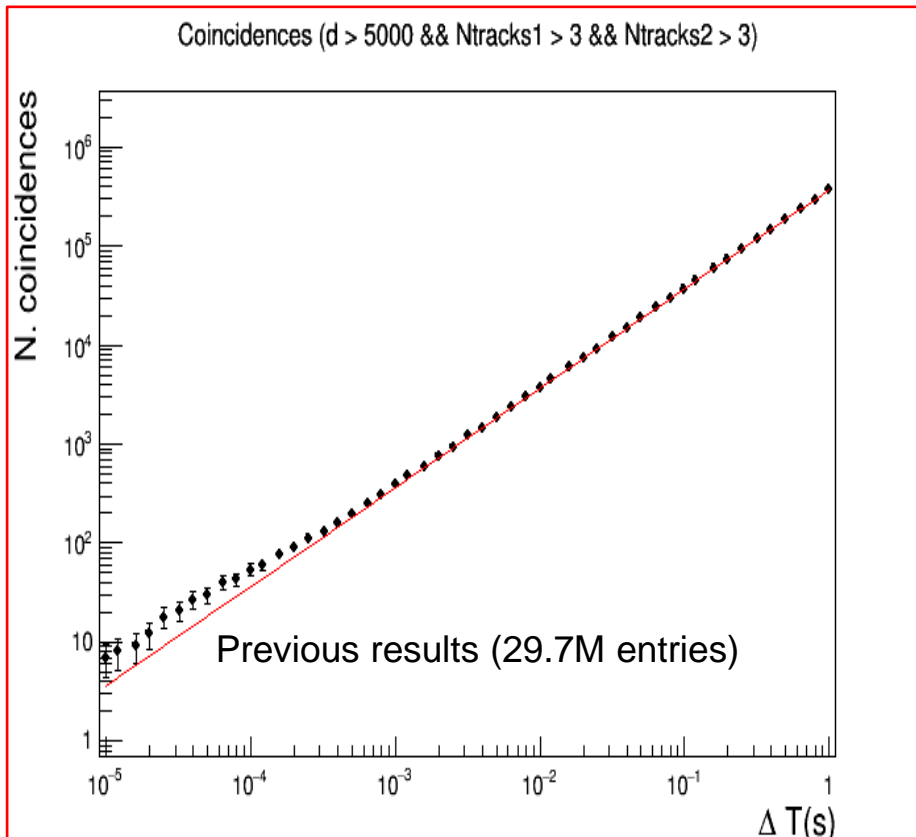
People: Paola La Rocca, Francesco Riggi, Silvia Pisano, Chiara Pinto

Data periodo: 2015-2019

Detectors: all EEE telescopes

Status: Tree with candidates was re-produced with additional information (available since Jan2021)

First checks on re-processed data



Analysis was run on the new tree of candidates with the same cuts (extra-info not considered here) to check the consistency of results.

In previous analysis also telescope clusters were considered → not yet included in the new tree.



Geomagnetic effect

Goal: measuring the cosmic-ray flux as a function of (geomagnetic) latitude

People: Francesco N, Marco G, Nicola M, Carmelo P, Daniele D, paper preparation: Marcello A, Rosario N

Data periodo: 2018

Detectors: POLA-01 (POLA-02, POLA-03)

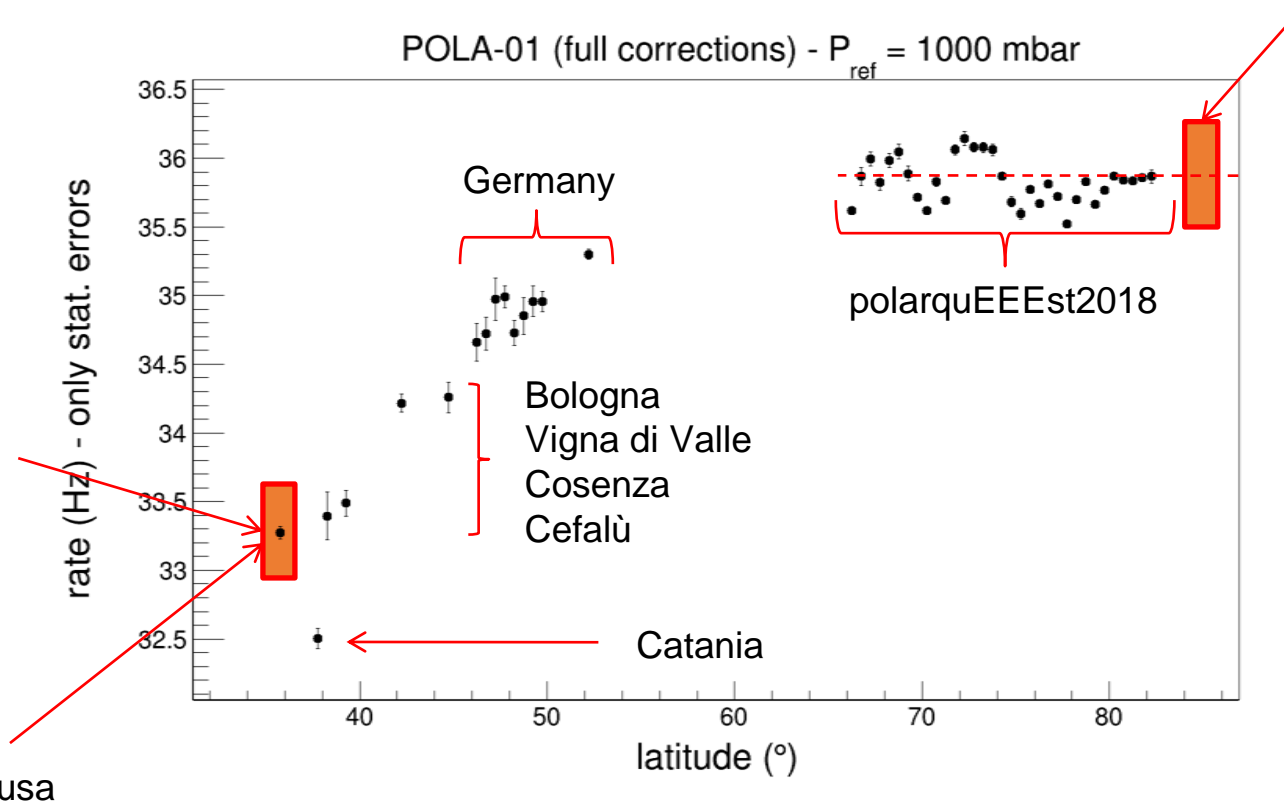
Status: few remaining checks to be done. Paper in preparation → shadowing effect inside the car



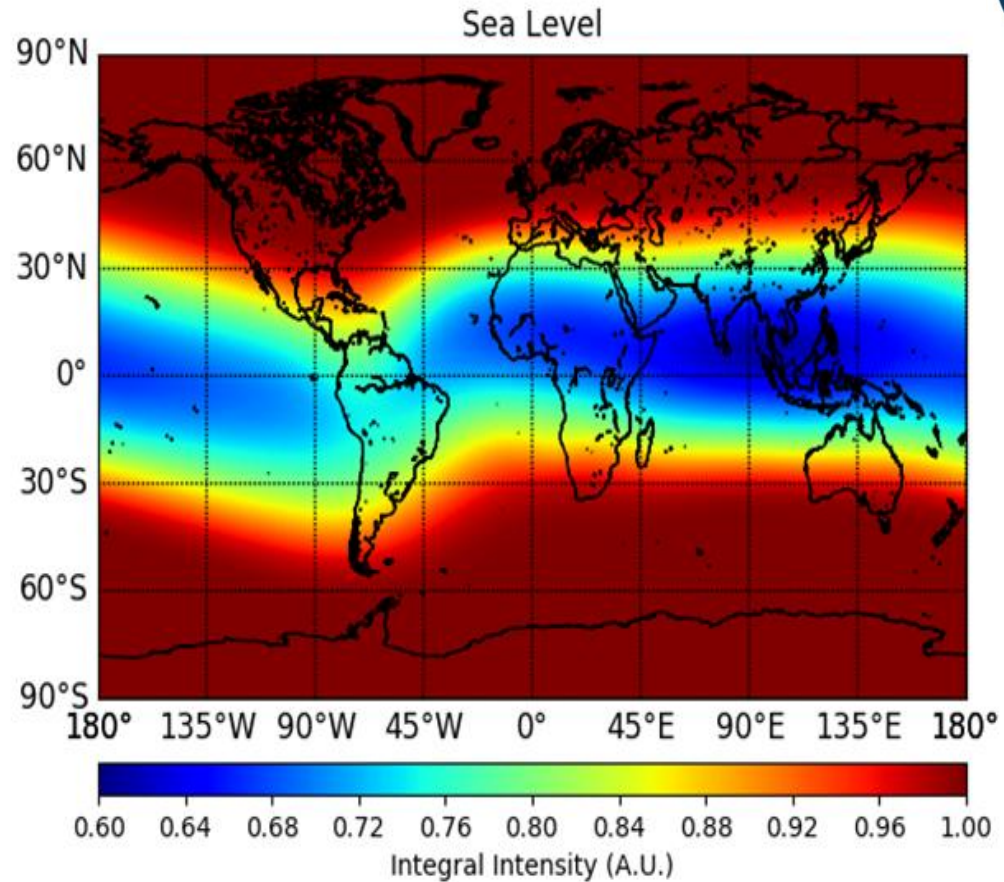
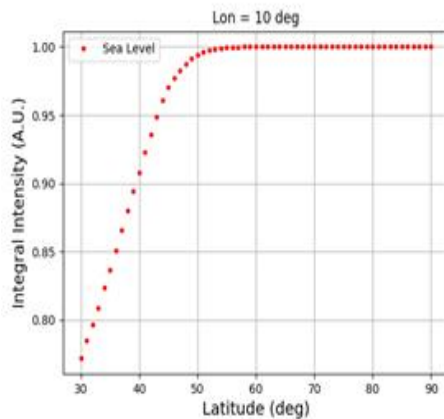
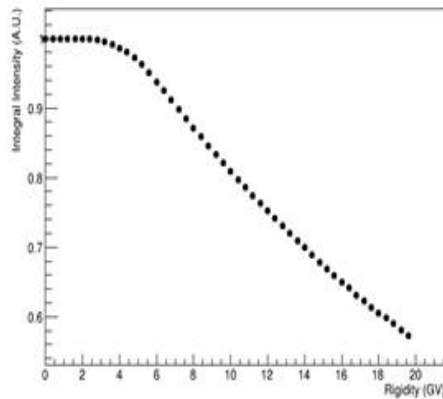
Geomagnetic effect (II)

1% error (0.36 Hz)
our goal for syst.

1% error
reported just
for reference



Integral intensity at sea level: μ^\pm , e^\pm , p ($E > 10$ MeV)



Polar detector performance @Svalbard



We collected several data (more than 1 year) with three polar telescopes @Ny Alesund.

We could have a look to the data to study the stability and performance of the detectors (as done for EEE telescopes in the past years).

In Bologna and Bari some preliminary checks were already performed.

Data periodo: 2019-2020

Detectors: POLA-01, POLA-03, POLA-04

People: to be defined, looking for volunteers



Seasonal effect on the cosmic-ray flux @Svalbard

We observed so far the seasonal effect with polar detectors in different conditions and data period.

We think it is the right moment to start a systematic study by comparing our measurements with previous results and prediction from models.

Data periodo: 2019-2020

Detectors: POLA-01, POLA-03, POLA-04

People: to be defined, looking for volunteers

Upgrades

- Maintenance and upgrade of our Polar setup in Ny Alesund (Svalbard)
- Expedition with Marina Militare Alliance boat (Italy-Svalbard \leftrightarrow , 3-4 months?)
- Expedition with Marina Militare Vespucci boat around the world (12-16 months?)
- Collaboration with INRiM: telescope alignment and synchronization

Organization of Physics coordination

Ongoing analyses will be discussed in dedicated Physics Coordination monthly meeting.

We will open a doodle as soon as possible to define the better time slot to match the needs of everybody.

If you are interested to join an analysis you are very welcome.

Please contact us (mazziotta@ba.infn.it,
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→ We need your contribution!!!