INTERNATIONAL COSMIC DAY

INFN - Trieste
6 November 2019

Muon Flux Measurement at Trieste

International Particle Physics Outreach Group

NETZWERK TEILCHENWELT

DESY.

Fermilab

QuarkNet

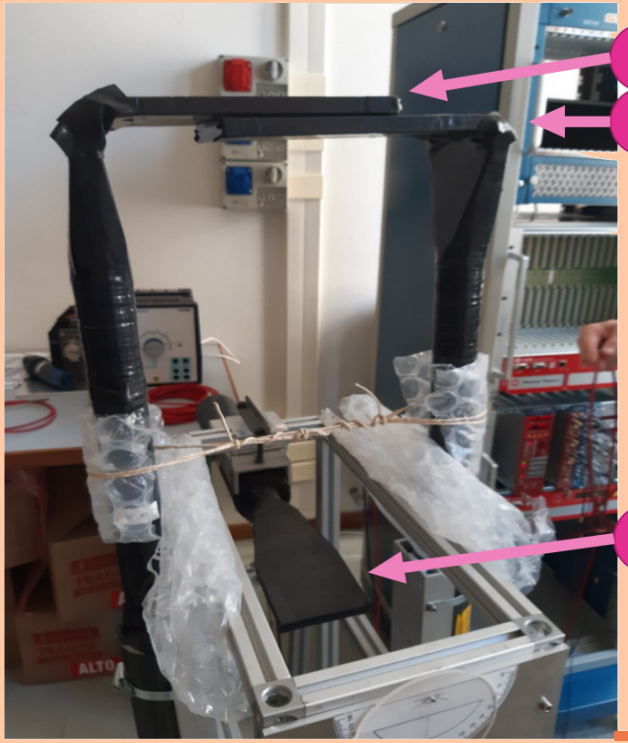
INFN TRIESTE
Istituto Nazionale di Fisica Nucleare
Sezione di Trieste

Scientific goal

Measure the angular dependence of the muon flux and compare with the expected law: I = I0*cos^2(θ)

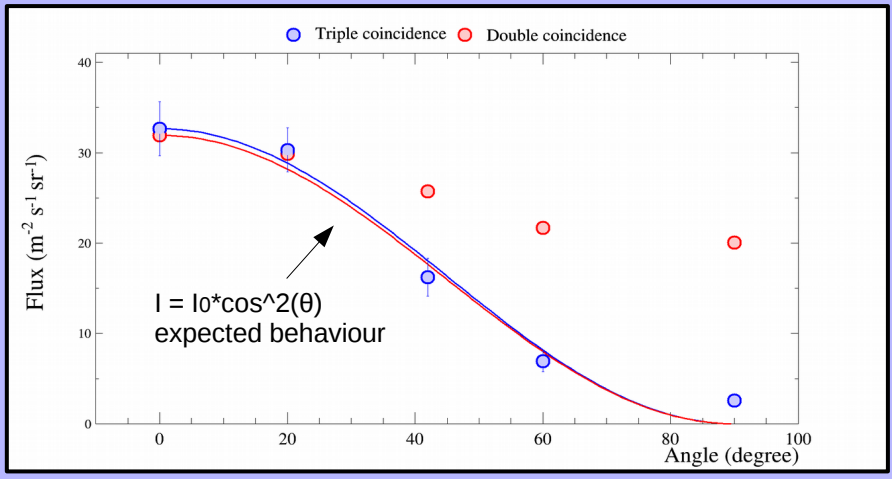
Experimental Setup

Muon telescope made by 3 plastic scintillator



Measurement and results

- We measured the counts (N) of the A&B and A&B&C coincidence for 5 different angles
- Then we estimate the flux with the formula: $I = \frac{N}{A * T}$ with A the acceptance and T the live time



Conclusions

- The flux measured with the triple coincidence follows reasonably good the expected behaviour
- The flux measured with the double coincidence is systematically higher with respect to the expectation. **This is because we are not measuring a well defined angle using only a single plane!**