INTERNATIONAL COSMIC DAY

Measurement of the angular dependence of the muon rate using the Cosmic Rays Cube

Friuli Venezia Giulia , Italy, secondary high school students

International Particle Physics Outreach Group

DESY.

Local organisers: A. P. Cuccarollo, M. Baruzzo, F. Longo, H. Luciani, E. Mocchiutti, P. Monti Guarnieri, G. Zampa (responsible R. Munini)

In cooperation with many networks and partners

INFN Istituto Nazionale di Fisica Nucleare Sezione di Trieste

Our collaboration

From Friuli Venezia Giulia region, Italy

- 50 students
- 7 institutes from Gorizia, Pordenone, Tolmezzo, Trieste and Udine
- 6 teachers

EDUCANDATO STATALE COLLEGIO UCCELLIS

Liceo Scientifico Udine

Liceo Scientifico Niccolò Copernico Udine

Liceo Grigoletti

PASCHINI LINUSSIO

Liceo Scientifico Duca Degli Abruzzi

LICEO GALILEO GALILEI SCIENTIFICO

Cosmic rays exist!

they are charged particles coming from space

- Discovered in 1912 by Victor Hess
- Millikan named them “cosmic rays”
- They are accelerated by supernovae explosions (Fermi mechanism)
- 90% of them are protons, 9% helium nuclei, 1% other nuclei and electrons
- They are confined in the Galaxy for about 10 million years
- They are diverted by magnetic fields

Our detector: the Cosmic Rays Cube

Goal of the experiment: measurement of the angular distribution of cosmic muons

- The cosmic rays cube is composed by four different layers
- The layers are made of plastic scintillators
- We took measurements at 0, 30, 60 and 90 degrees by tilting the apparatus