
INTERNATIONAL
COSMIC DAY
INFN

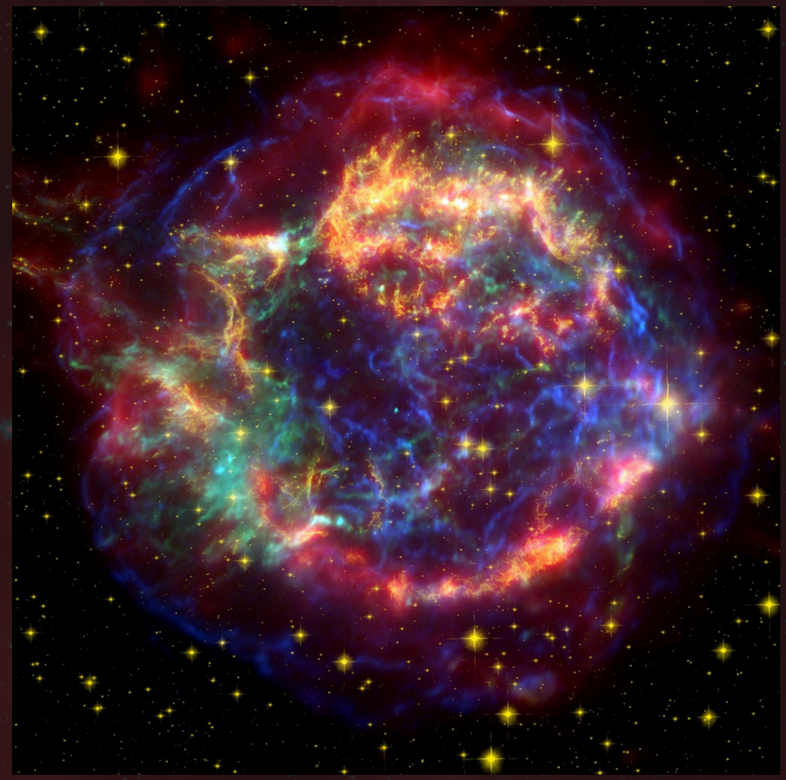
# WELCOME TO OUR PRESENTATION

Liceo Nobel (Torre del Greco)
Liceo Telesia (Telesa)
Liceo Galilei (Naples)
Liceo Pascal (Pompeii)

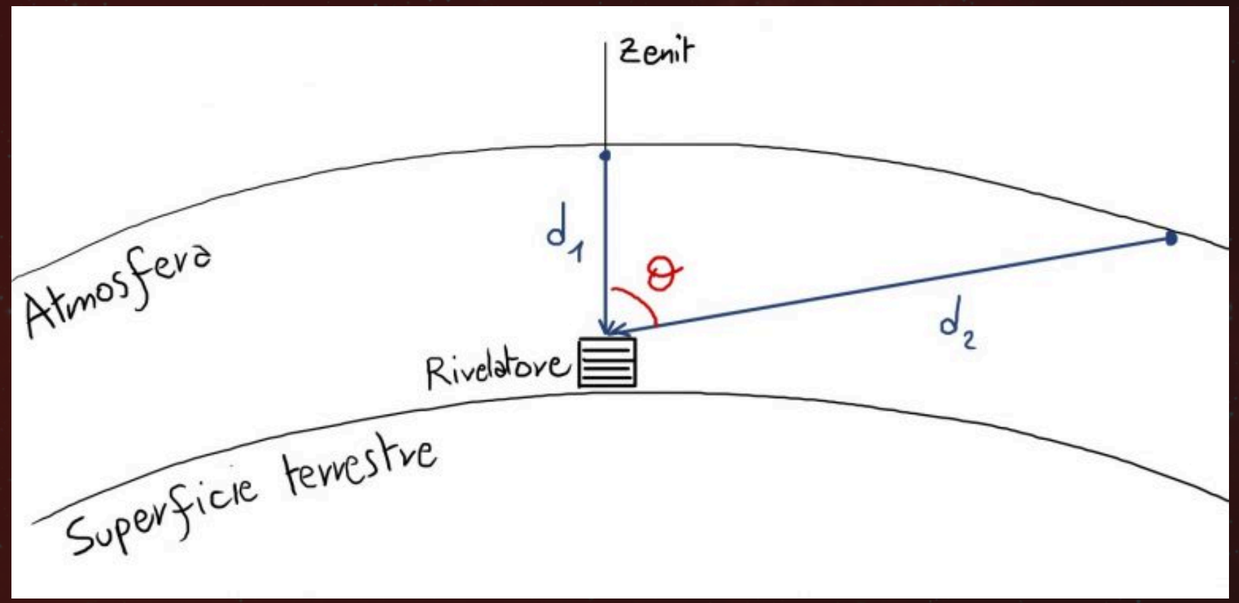
# COSMIC RAY CUBE

01 Firstly we learned how the cosmic ray cube works and coopereted to gain few informations

02 each group of student counted the number of muons per minute, then reapiting the mesurements for different angles.



# MUON RATE AS FUNCTION OF ZENITH ANGLE




We have verified that the muons rate decreases at the increase of the zenith angle

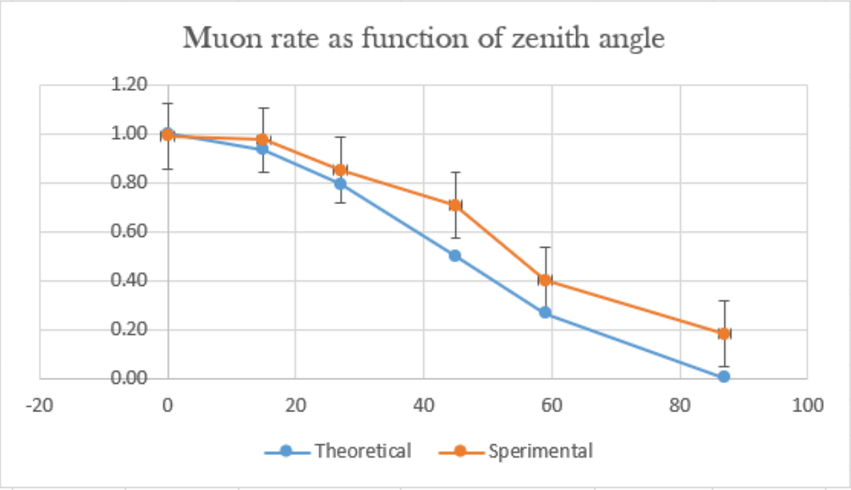
Different angles, different mesurements

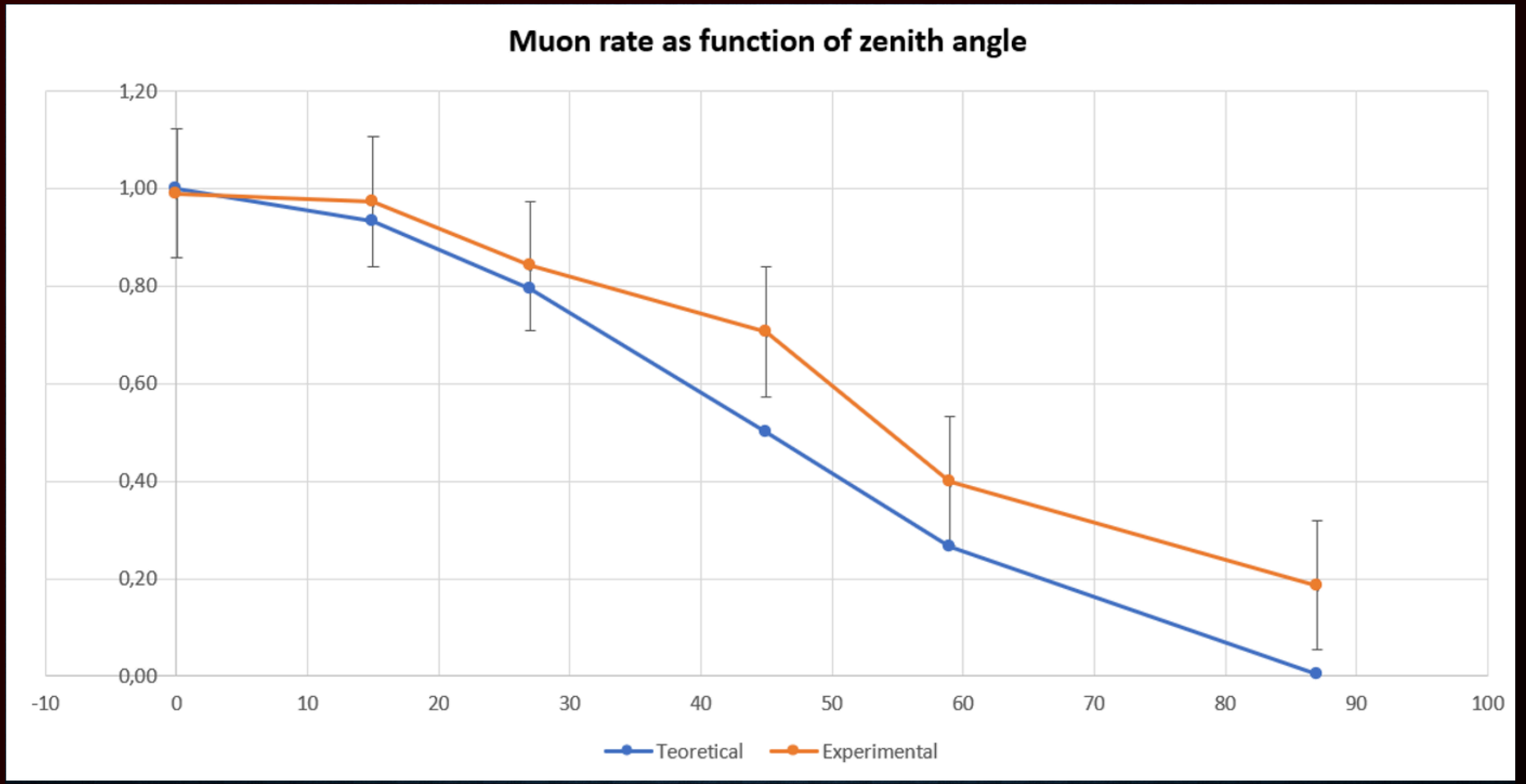
# EXPERIMENTAL DATA:

| DEGREES | $R_1$ | $R_2$ | $R_3$ | $R_4$ | $R_5$ | $R_6$ | MEDIA | MEDIA/50 | ERRORS |
|---|---|---|---|---|---|---|---|---|---|
| 0 | 50.0 | 48.0 | 49.0 | 51.0 | | | 49.5 | 0.99 | 0.03 |
| 15 | 48.0 | 48.0 | 47.0 | 48.0 | 49.0 | 52.0 | 48.7 | 0.97 | 0.05 |
| 27 | 39.0 | 38.0 | 50.0 | 50.0 | 39.0 | 39.0 | 42.5 | 0.85 | 0.12 |
| 45 | 39.0 | 39.0 | 34.0 | 34.0 | 32.0 | 34.0 | 35.3 | 0.71 | 0.07 |
| 59 | 19.0 | 19.0 | 19.0 | 19.0 | 22.0 | 22.0 | 20.0 | 0.40 | 0.03 |
| 87 | 10.0 | 10.0 | 8.0 | 8.0 | | | 9.0 | 0.18 | 0.02 |

| DEGREE | | COS⊥2 θ |
|---|---|---|
| 0 | 0 | 1.000 |
| 15 | 0.26167 | 0.933 |
| 27 | 0.471 | 0.794 |
| 45 | 0.785 | 0.500 |
| 59 | 1.02922 | 0.266 |
| 87 | 1.51767 | 0.003 |

| DEGREES | Theoretical | Sperimental |
|---|---|---|
| 0 | 1.00 | 0.99 |
| 15 | 0.93 | 0.97 |
| 27 | 0.79 | 0.85 |
| 45 | 0.50 | 0.71 |
| 59 | 0.27 | 0.40 |
| 87 | 0.00 | 0.18 |




Muon rate as function of zenith angle
1,20
1,00
0,80
0,60
0,40
0,20
0,00
-10
0
10
20
30
40
50
60
70
80
90
100
Teoretical
Experimental


THANK YOU