

Particle Physis Summer Student Programme



PPSSP format

- Intended for students from any country, some financial support available
- Students after 2 years of university can apply
- Selection according to results of some test over 40 students accepted (limited by the number of available supervisors)
- Four weeks programme 1 week of lectures and excercises + 3 weeks of work on a selected project (in teams of 2 students)

CREDO project 2019 - Detection of Cosmic-Ray Showers

- analysis of cosmic-ray cascade properties (from CORSICA), parameterization of density of particles
- calculation of probability of detection of the cascade for different configurations of simple detectors





Analysis of events from CORSICA

- particle density as a function of the distance (r) from the cascade center
- partcile density as a function of azimuthal angle







Fit of the particle density

Number of entries in the function of radius in logarithmic scale







Fluctuations of particle density

Difference in random and non-random points with errors







Calculations for four simple detectors - probability of detecting a cascade depending on:

- surface of the detectors
- position of the detector with respect to the center of the cascade



NO DETECTION





Calculations for four simple detectors -

probability of detecting a cascade depending on:

- surface of the detectors
- position of the detector with respect to the center of the cascade







Outcome

- first step to analysis of the acceptance of set of CREDO detectors
- students attracted to the CREDO project
- useful results expected after the preparation of the thesis

