

A scientific and educational experience to engage high school students to gamma ray physics

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A peculiar PCTO course involved a class of 19 Italian 16/17 years-old students attending Scientific Lyceum "Mangino" of Pagani (Italy) on topics related to the Cherenkov Telescope Array - CTA for "A scuola di astroparticelle" contest



"A scuola di astroparticelle" (At school for astroparticles) is a contest for high school students, which has involved thousands of students over the last five years.

Every year the students, supervised by their teachers and researchers from the proposing organizations, undertake projects on current topics in scientific research: the origins and study of the Universe, cosmic rays and gravitational waves, environmental radioactivity, methodologies in health physics, optics, nanotechnologies and quantum technologies, as well as technical aspects linked to the development of photon and particle detectors, such as the telescope in the Toledo station of the Naples metro and its Multimedia Totem from which the idea for the project originated.

During the CTA-PCTO activities, students were able to explore the intriguing extreme Universe, CTA's innovative technology and its coming scientific achievements. All the activities carried out during the CTA-PCTO were organized as an "action-research" to develop an alternative, effective and inspiring approach to the study of astroparticle physics and, in particular, of gamma-ray physics.

The students created a paper model of the CTA's Large-Sized Telescope a crossword puzzle and an interactive Q&A, and wrote an article in Italian aimed at younger high-school students to introduce the gamma-ray Universe. They started with a visit to the telescope of the Toledo Metro, participated in the International Cosmic Day ICD2020, and finally took part in the European Researchers' Night "MEETmeTONIGHT" 2020.



The whole experience has been reported on a website created by the students
<https://sites.google.com/liceomangino.it/pcto-mangino-infn-cosmic-rays/home?authuser=0>