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“THE PIERRE AUGER OBSERVATORY” a peculiar didactical experience between school and work

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In this presentation it will be described a peculiar educational experience with a class of Italian students aged 17-18 during the competition “at the school of Astroparticles” organized by the National Institute for nuclear physics INFN. It will also be shown how the action-research in scientific methodology formed an alternative, effective, and motivating approach to the study of Physics. Students had significant advantages thanks to the information and the scientific data recorded by the Pierre Auger Observatory and transmitted to a computer in an accessible area to process by the web. The teachers, researchers, and technicians of INFN were very helpful for the students who were able to reconstruct extensive atmospheric showers with computer software: intensity of signals, areas, directions and arrival times with data available for outreach activities of the Pierre Auger observatory, located in the Pampa Argentina on 3000Kmq of surface and composed of 1600 particle detectors and 24 fluorescence telescopes. This experience showed them an alternative captivating educational approach, having experienced the excitement of research, and having produced a scientific article and final software. The success of the educational activity is reflected both in auto-cognitive books written by the students themselves and in skills achieved in checks during the experience.

Summary

- introduction to the didactical activity
- a brief history of cosmic rays
- the Pierre Auger Observatory (PAO)
- Pierre Auger Observatory data analysis
- data use for the reconstruction of the event
- effects in education

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