

# ONLINE ICRC 2021

THE ASTROPARTICLE PHYSICS CONFERENCE  
Berlin | Germany

37<sup>th</sup> International  
Cosmic Ray Conference  
12–23 July 2021



## “A scuola di Astroparticelle”: a synergy between school education and scientific research

PoS(ICRC2021)1393, O&E

Roberta Colalillo<sup>1,2</sup> and Carla Aramo<sup>1</sup> for the OCRA Collaboration

<sup>1</sup>INFN, Sezione di Napoli, Italy

<sup>2</sup>Università degli Studi di Napoli “Federico II”, Dipartimento di Fisica “E. Pancini”, Italy



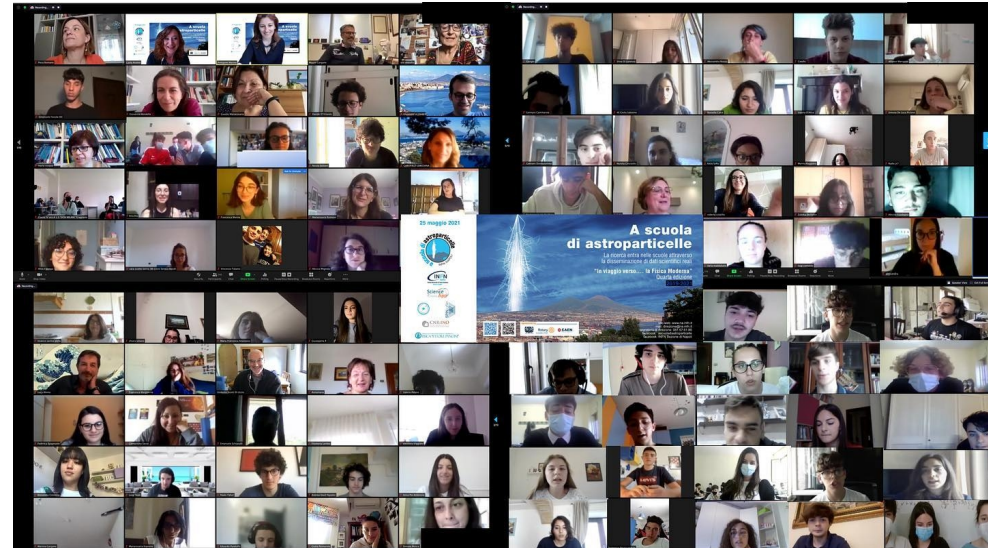
# A scuola di Astroparticelle

The outreach program “A scuola di Astroparticelle” was born in 2016 with the idea to **engage teachers and students of High Schools in astroparticle physics projects**

→ since 2018, the program is part of OCRA - Outreach Cosmic Ray Activities - a national outreach project of INFN which collects local outreach activities in cosmic-ray field.

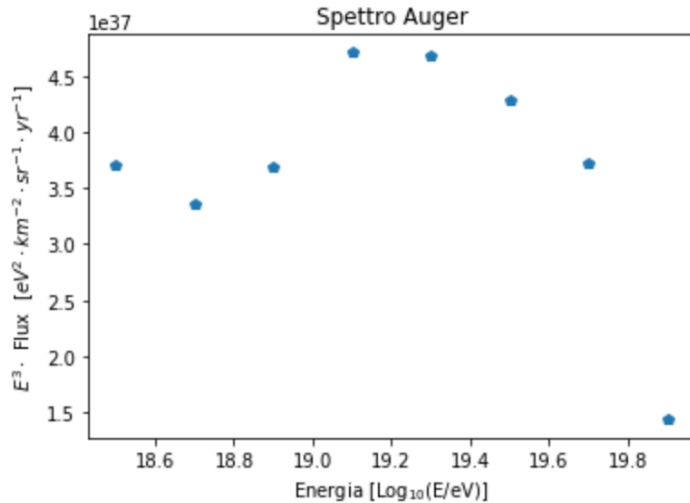
→ the program is also part of the Italian Educational Program PCTO – “Percorsi per le Competenze Trasversali e per l’Orientamento”, whose purpose is that students earn abilities to interact and work with others, problem solving skills, creativity, critical thinking, awareness, and capacities to address the complexity and uncertainty of changes.

- The third edition (2018/2019) involved 18 schools for a total of 21 projects on several topics.
- Due to the COVID-19 pandemic, the fourth edition was a fruitful online edition which allowed students to enrich their wealth of knowledge and experiences despite the difficult situation.



# Being a researcher using the public data of the Pierre Auger Observatory

Measurement of the energy spectrum of vertical cosmic-rays (zenith < 60 degrees) detected with the Pierre Auger Surface Detector using the 10% of Auger data.  
Python notebooks helped students in their work.



The energy spectrum is compatible with the published one but students have more fluctuations due to the low statistics.

Students retraced all steps of the analysis questioning about the difficulties encountered.

- “A scuola di Astroparticelle” fully satisfies the requests of the Italian Educational Project PCTO.
- Students were enthusiastic about this experience. They used the newly acquired knowledge for their final exam and the work done was highly appreciated by the jury.
- The project is a valid tool for school and personal growth of young students.
- In the next years, we will continue to propose “A scuola di Astroparticelle” as PCTO and to expand the available research paths.

