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HEP interactive activities in high schools in the framework of the CREATIONS project

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CREATIONS is a three-year long European Union funded project, which aims to increase the young people's interest in science. Sixteen partners from ten European countries develop creative approaches based on science and art for an engaging science classroom. The project is now in its 2nd year and a variety of events have already taken place. We have been developing advanced digital tools and educational scenarios in order to facilitate the introduction of HEP in high schools.

In the framework of CREATIONS we have performed a number of interventions in Greek schools which take the form of half-day masterclasses. The students, working in their schools' computer labs, have the opportunity to use the inquiry based science education scenarios which have embedded tools for analysing data from the ATLAS experiment or discovering how the LHC works through playful learning. The work of students is monitored step by step by a specially designed integrated assessment system which consists of three different layers.

- A figurative test, delivered before and after the activity, to measure whether the students' exposure to particle research has helped them recognize different patterns in the provided shapes.
- A set of assessment questions in each of the four phases of the scenario which uses as a reference the PISA 2012 Framework developed for the assessment of problem solving competence.
- A number of indicators embedded in the HYPATIA online analysis tool, which provide information about the ability of the students to understand and handle the complex analysis of short lived particle signatures in the state-of-the-art ATLAS detector.

The data analysis, which will be summarized, demonstrates that the interventions in the classrooms have followed the planned format (activities organisation, resources used, time devoted per inquiry phase). In addition the results provide clear indication that students involved are demonstrating deep involvement and high problem solving skills.

Experimental Collaboration

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