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How the “HYPATIA” analysis tool is used as a hands-on experience to introduce HEP to high schools

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The “HYPATIA” (HYbrid Pupil’s Analysis Tool for Interactions in ATLAS) is a tool which has been created by the authors of this abstract and has been evolving over a number of years. Apart from the IPPOG’s International Masterclass downloadable HYPATIA version, there is an online version which now exists in the form of a webapp. All data from the ATLAS experiment at the Large Hadron Collider of CERN necessary for performing different educational analysis paths, exist online. Such examples of interactive analyses vary from the calculation of the magnetic field of one of the ATLAS magnets, to detecting “pseudo” Higgs events and will be given in the presentation. These applications have been used in recent years in a large number of schools in the form of a half a day mini local (or even remote) masterclass. These activities have been supported by various EC outreach programs which give emphasis to promoting science education in schools through new methods based on the inquiry based techniques: questions, search and answers. This way we have been able to introduce cutting edge research in particle physics to High Schools bridging the gap between research and school hands-on experience.

Summary

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