

Large Detector Systems in Particle Physics Experiments and the Role Africa Will Play in the Detector Technologies of the Future?

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Abstract

In this talk, we will give a brief overview of some of the detector technologies deployed in large-scale experiments in particle physics research labs and through a specific Micro Pattern Gaseous Detector (MPGD) technologies example, we will discuss challenges associated to these technologies in term of production, assembly, characterization and deployment in complex detector system for the experiments.

In the second half of the talk, we will initiate the discussion on the role that African countries could play in the development of detector technologies in the future for application in various field of fundamental and applied science.

We will hope to engage the audience to explore initiatives under the African Strategy for Fundamental and Applied Physics (ASFAP) umbrella to encourage African research institutions and universities to invest in detector research and development (R&D) and in infrastructures dedicated aimed at covering all aspects of detector technologies and providing opportunities to generation of bright young African minds to take part in international collaboration of large-scale experiments at facilities such as the Electron Ion Collider (EIC) in the USA or the European Organization for Nuclear Research (CERN) and to contribute to the deployment and operation of detector technologies in future experiments.