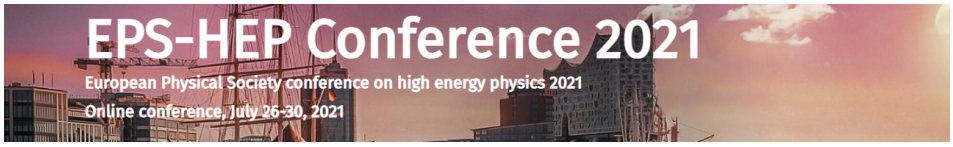

Contribution ID: **1099** Type: **Poster**

The tracking system of the IDEA detector concept for a future e+e- collider

The IDEA detector concept for future e+e- colliders proposes a tracking system composed by a Si based inner system, an ultra-low mass Drift Chamber central system with Particle Identification capabilities and a Si based outer layer surrounding the drift chamber. The designed tracking system allows to fulfill the high momentum and angular resolutions requirements for the whole momentum range, particularly for low momenta, thanks to the extremely low material budget. Moreover, the use of the Cluster Counting technique allows for particle identification (PID) resolution below 3%, a factor two better than the resolution attainable with traditional dE/dx techniques. Details about the construction of the drift chamber, including both the speculation about new materials for the field wires and new techniques for soldering the wires, the development of an improved layout of the drift cells , and the choice of the gas mixture will be described. The expected tracking system performance together with the Improved PID obtained with the cluster counting technique will be reported.

Collaboration / Activity

FCC

First author

Email

Primary author: Dr TASSIELLI, Giovanni F. (Università di Bari & INFN Bari (IT))

Presenter: Dr TASSIELLI, Giovanni F. (Università di Bari & INFN Bari (IT))

Session Classification: T12: Detector R&D and Data Handling

Track Classification: Detector R&D and Data Handling