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Future Circular Collider Study

The Future Circular Collider (FCC) Study, hosted by CERN, is an international collaboration of more than 70 institutes from all over the world. The FCC is a proposed next-generation circular collider with a circumference of 100 km and its goal is to push the energy and intensity frontiers of particle colliders in the search for new physics. This FCC accelerator complex would be the next large research facility after the High-Luminosity Large Hadron Collider (HL-LHC), when these approach the limits of their discovery potential around 2035. Three different types of machines are currently under study: the FCC-hh, a proton-proton collider; the FCC-ee, an electron-positron collider and the FCC-he with proton-electron collisions.

The CERN Survey team is implicated in all stages of the assembly and installation of accelerator beamline and experiment detector components for any new project. Our studies are concentrated on those aspects which present new challenges: the need of extensive areas of Permanent Monitoring and Alignment Systems, a potential remote maintenance system, development of new methods and instrumentation in order to meet the high alignment precision requirements and the extension of the geoid model and reference systems used at CERN.

Summary

Author: JONES, Mark (CERN)

Co-author: IBARROLA SUBIZA, Nerea (CERN)

Presenter: JONES, Mark (CERN)