

THE FIRST ITALIAN WORKSHOP ON THE GREAT ACCELERATOR OF THE FUTURE



The First FCC-Italy Workshop was recently held in Rome. This was the first Italian workshop dedicated to the project for the successor of the Large Hadron Collider at CERN, the Future Circular Collider. The event, organized by INFN, was attended by 120 researchers, and 15 reports were presented.

In the latest document on the European Strategy for Particle Physics, approved by the CERN Council in June 2020, FCC is indicated

as the future project of the highest priority: from here a vast program of feasibility studies has begun, which will constitute an important input for the next Update of the European Strategy for Particle Physics.

The FCC project envisages a new accelerator machine much more powerful than the current LHC, with a circumference of about 91 km to be realized in a tunnel under French and Swiss territory, in the nearby of CERN to exploit the existing infrastructures. In a first phase (FCC-ee) the tunnel should host a collider of electrons and positrons with energy ranging from 90 to 365 GeV. Subsequently, this would be replaced by a proton collider (FCC-hh) with an energy of 100 TeV in the center of mass, almost an order of magnitude higher than the energy of LHC. The idea is to start with FCC-ee and in parallel to continue the R&D work necessary to realize the dipoles at 16 T, needed to maintain the trajectory of the 50 TeV protons inside the ring. The workshop was the first of a series with which INFN intends to promote and support the FCC process and technological R&D developments crucial for its implementation.