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## The Future Circular Collider Project and its Physics Programme

*Thursday, 7 September 2023 11:00 (20 minutes)*

The talk will provide a brief description of the proposed Future Circular Collider (FCC) project and its physics program. According to the latest update of the European Strategy for Particle Physics, the first stage of the project will be the construction of an approximately 90 km circular tunnel, instrumented with an  $e^+e^-$  collider based on established technologies. This would allow for an extensive physics program, realized at center-of-mass energies spanning the range from the Z resonance up to a  $t$ -bar threshold. Such a machine, called FCC-ee, would provide a clean experimental environment, producing high luminosity for precision measurements of the Higgs boson, W and Z bosons, and the top-quark. Precision searches will test the consistency of the Standard Model and push the sensitivity to new physics at high scales. Direct searches for new particles, including dark matter, are also feasible.

The tunnel can then be reused for a proton-proton collider (FCC-pp), collecting data in the range of 100 TeV. Such a machine would offer a vast program of measurements of the Standard Model observables and a huge potential of direct searches for new particles.

During the talk, both the aspects of the accelerator and physics program of the FCC project will be presented, paying special attention to the  $e^+e^-$  stage

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