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The FCC integrated programme: a physics manifesto

The FCC integrated programme comprises an e^+e^- high-luminosity circular collider that will produce very large samples of data in an energy range $88 \leq \sqrt{s} \leq 365$\,GeV, followed by a high-energy pp machine that, with the current baseline plan, will operate at a collision energy of around 85\,TeV and deliver datasets an order of magnitude larger than those of the HL-LHC. This visionary project will allow for transformative measurements across a very broad range of topics, which in almost all cases will exceed in sensitivity the projections of any other proposed facility, and simultaneously provide the best possible opportunity for discovering physics beyond the Standard Model. The highlights of the physics programme are presented, together with discussion on the key attributes of the integrated project that enable the physics reach. It is noted that the baseline programme of FCC-ee, in particular, is both flexible and extendable, and also that the synergy and complementarity of the electron and proton machines, and the sharing of a common infrastructure, provides a remarkably efficient, timely and cost-effective approach to addressing the most pressing open questions in elementary particle physics.

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