

ICFA applauds the 2020 Update of the European Strategy for Particle Physics

At its meeting on August 2, 2020, ICFA (the International Committee for Future Accelerators), applauded the European Strategy¹ updated by the CERN Council in June 2020.

Acknowledging progress since the previous update in 2013, the Strategy states that the luminosity upgrade to the highly successful Large Hadron Collider (LHC) and the detectors should remain Europe's focus for particle physics to exploit full physics potential of the LHC.

The Strategy also calls for Europe to continue to support the long baseline neutrino projects in Japan and the US, and in particular to continue collaboration with the US and international partners for the successful implementation of LBNF and DUNE.

For the future initiatives, an electron-positron Higgs factory is considered as the highest priority next collider, consistent with ICFA Statement², and a proton-proton collider at the highest achievable energy is recognized as the ambition for the longer term.

The Strategy recommends the investigation of the feasibility of a future hadron collider at CERN with collision energy of at least 100 TeV (the LHC design energy, for comparison, is 14TeV) with the possibility of an electron-positron Higgs and electroweak factory as the first stage. The Strategy Update states that such a feasibility study should be established as a global endeavour. ICFA, whose clear focus is to encourage such studies on an international scale welcomes the initiative.

Resonating with the mandate of ICFA, the European Strategy Update highlights the need for innovation in advanced accelerator technologies, especially on superconducting magnets. It recommends intensifying accelerator R&D and to support it with sufficient resources and that a long-term roadmap be developed. ICFA is highly supportive of these recommendations.

The timely realisation of the International Linear Collider (ILC) as an electron-positron Higgs Factory is stated to be compatible with the European Strategy. In that case the European particle physics community would wish to collaborate. ICFA's recent establishment³ of the ILC International Development Team is consistent with this position.

ICFA is highly supportive of several important international activities recommended – innovative instrumentation and infrastructure, and collaborative platforms for development and testing, coordinated R&D effort to develop and to exploit advanced information technology and data science. All these are critical for the future success of the field.

ICFA congratulates the European particle physics community and CERN on the Strategy Update, and supports its calls for strong international collaboration that continues to be a unique strength in the field. Of similar importance will be the upcoming Community Study "Snowmass" process⁴ in the US, which will lead to the next iteration of the US Strategy for particle physics in the global context, anticipated in a couple of years.

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¹ <https://europeanstrategy.cern/european-strategy-for-particle-physics>

² ICFA Statement on the ILC Project, https://icfa.fnal.gov/wp-content/uploads/ICFA_Statement_22Feb2020.pdf

³ ICFA announces a new phase towards preparation for the International Linear Collider, https://icfa.fnal.gov/wp-content/uploads/ICFA_Statement_August_2020.pdf

⁴ <https://www.snowmass21.org/>