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Theory Requirements and Possibilities for the FCC-ee and other Future High Energy and Precision Frontier Lepton Colliders

The future lepton colliders proposed for the High Energy and Precision Frontier set stringent demands on theory. The most ambitious, broad-reaching and demanding project is the FCC-ee. We consider here the present status and requirements on precision calculations, possible ways forward and novel methods, to match the experimental accuracies expected at the FCC-ee. We conclude that the challenge can be tackled by a distributed collaborative effort in academic institutions around the world, provided sufficient support, which is estimated to about 500 man-years over the next 20 years.

Authors: GLUZA, Janusz (University of Silesia); BLONDEL, Alain (Universite de Geneve (CH)); JANOT, Patrick (CERN); JADACH, Staszek (Polish Academy of Sciences (PL)); RIEMANN, Tord; HEINEMEYER, Sven (CSIC (Madrid, ES)); FREITAS, Ayres (University of Pittsburgh)

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