

Physics Motivations for Future Machines

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The discovery of a new particle compatible with the long-sought Brougt-Englert-Higgs scalar field predicted by the Standard Model (SM) opens new horizons for a future intense program for precision studying its properties. With this particle, all the components of the SM have now been unraveled. However, the existence of dark matter, baryon asymmetry of the Universe and neutrino mass call for New Physics (NP) at an energy scale, which is not determined so far. New powerful large scale accelerators will be needed to address these major questions through ultra high precision measurements and/or exploration of higher energy frontiers. The physics reach and R&D highlights of various accelerator projects aimed at the achievement of the above objectives will be discussed.