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Future Accelerators at the Particle Physics Frontier

Thursday, 3 July 2014 11:00 (25)

A general overview of concepts, designs, technologies and future possibilities will be presented for energy and intensity frontier accelerators and colliders for particle physics in the next 50 to 100 years, offering a scientific, technical and fiscal risk-benefit analysis and strategies to move forward. The talk will discuss the near-, mid-, and long-term future options including various linear and circular colliders for lepton, hadron and lepton-hadron collisions (including the Future Circular Colliders (FCC) at CERN and its global equivalents elsewhere) and high intensity neutrino beams as well as an analysis of advanced acceleration schemes involving lasers, plasmas, crystals, etc. The important factors of energy consumption, efficiencies, capital and operating costs including a “green” agenda will be presented. Finally, alternative schemes to reach the high energy frontier relevant to “dark matter” and “dark energy” via non-accelerator laboratory-scale set-ups using cavities, atoms, lasers and plasmas will be explored.

Summary

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Session Classification : Accelerator Physics and Future Colliders

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