Collider Physics

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1   Abstract

In Lecture 1, the basic concepts, techniques and tools for collider phenomenology will be presented. Physics at an e^+e^- Linear Collider is discussed as illustration for collider techniques.

In Lecture 2, physics for hadron colliders will be presented. QCD factorization and parton distribution functions are introduced in hadronic collisions for high energy scattering. Kinematics unique to hadronic collisions are constructed in order to uncover the underlying dynamics at the LHC.

Lecture 3 is devoted to more advanced topics, where we will bring the audience to the current active searches for new physics beyond the standard model at the LHC, and suggest the theoretical approaches for the discovery.