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The Potential of the ILC for Discovering New Particles

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The LHC did not discover new particles beyond the Standard Model Higgs boson at 7 and 8 TeV, or in the first data samples at 13 TeV. However, the complementary nature of physics with e+e- collisions still offers many interesting scenarios in which new particles can be discovered at the ILC. These scenarios take advantage of the capability of e+e- collisions to observe particles with missing energy and small mass differences, to observe mono-photon events with precisely controlled backgrounds, and to observe the full range of exotic decay modes of the Higgs boson. The searches that an e+e- collider makes possible are particularly important for models of dark matter involving a dark sector with particles above the modest energy reach of fixed-target experiments. In this talk, we will review the opportunities that the ILC offers for new particle discovery.

Experimental Collaboration

ILC, LCC Physics working group

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