

APR07-2007-000901

Abstract for an Invited Paper
for the APR07 Meeting of
the American Physical Society

Anticipating New Physics at the LHC

JOANNE HEWETT, Stanford Linear Accelerator Center

Exploration of physics at the TeV scale holds the promise of addressing some of our most basic questions about the nature of matter, space, time, and energy. The Large Hadron Collider at CERN will break into this new energy frontier when it begins operation later this year. Discoveries of the Electroweak Symmetry Breaking mechanism, Supersymmetry, Extra Dimensions of space, Dark Matter particles, and new forces of nature are all possible. I will review the theoretical motivations for these anticipated discoveries and highlight their principal signatures at the Large Hadron Collider.