APR18-2018-001229

Abstract for an Invited Paper
for the APR18 Meeting of
the American Physical Society

Long-lived Particles at the LHC

JESSIE SHELTON, UIUC

Long-lived particles (LLPs) present both a major opportunity and a major challenge at the LHC. On one hand, the backgrounds for displaced objects are inherently small, in many cases making prospects for displaced signals much better than for otherwise similar prompt signals. On the other hand, searches for LLPs are particularly challenging as they demand specialized reconstruction algorithms, and, since they involve aspects of detector response which cannot be reliably simulated with public tools, are notoriously di cult for theorists to accurately apply to new models. I will discuss theoretical motivations for LLPs, new ideas for searches, and the great opportunities and challenges offered by LHC Run 2 and beyond.