The Emergence of Jets at the Large Hadron Collider

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Abstract: The Large Hadron Collider (LHC) at CERN is the largest scientific instrument ever built. Its greatest success at this point is the discovery of the Higgs boson, but we hope for many more discoveries in the coming years. So far, the LHC experiments have focused mostly on the cleanest discovery channels, i.e. those without the collimated beams of particles known as jets. Although these jets are ubiquitous at the LHC, they provide tremendous challenges to both theory and experiment. On the theory side, they are not well described at any order in perturbation theory; on the experimental side, they are hard to accurately measure. Over the last decade or so, there has been remarkable progress in overcoming these challenges. This talk will review elements of the LHC program including the Higgs discovery and discuss the ongoing revolution in jet physics.