

Contribution Title:	NEW TECHNOLOGIES IN THE HUNT FOR NEW PHYSICS
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The Large Hadron Collider at CERN will probe a new regime of physics, seeking answers to long-standing puzzles underlying the Standard Model of particle physics. Precision computations of known physics, and in particular of scattering processes in quantum chromodynamics, will play an important role in understanding backgrounds to new physics. The required calculations are complex and difficult. Recent years have seen the emergence and maturation of new “on-shell” technologies, based on unitarity and factorization with a pinch of twistor string theory, for performing calculations of loop amplitudes in gauge theories. These technologies have made possible calculations equivalent to the evaluation of millions of Feynman diagrams. I review these technologies and some of their applications.