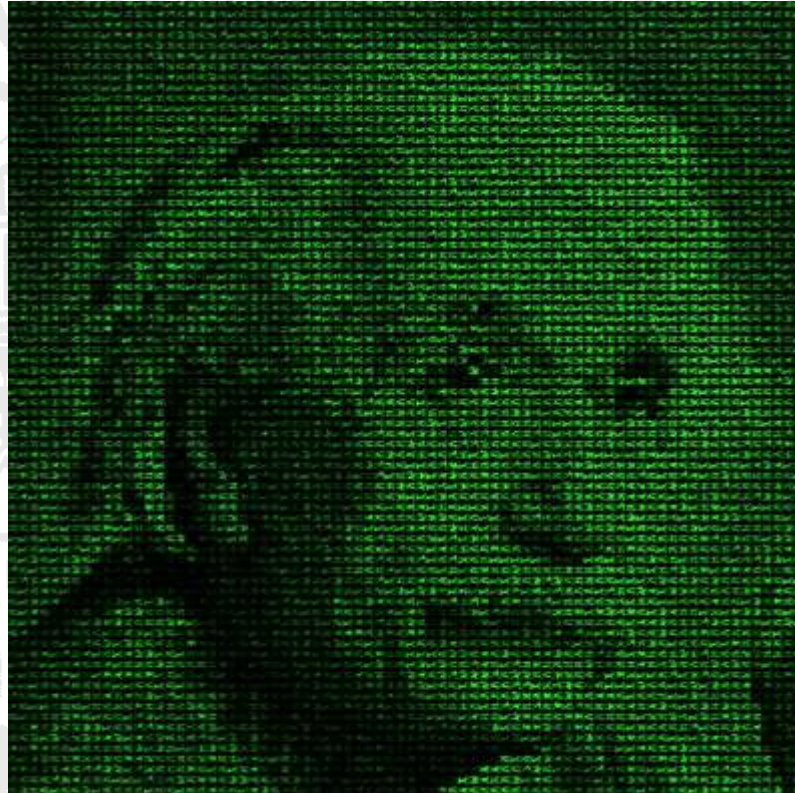




SONDERKOLLOQUIUM

AM 8. DEZEMBER 2017 UM 15:00 UHR
IM HÖRSAAL II, PHYSIK-HOCHHAUS



A geometer's portrait generated from Feynman diagrams, which are used for LHC predictions

Precision Predictions for Particle Colliders from Geometry

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In the coming years, experiments at the Large Hadron Collider (LHC) at CERN will reach a new level of precision in particle-scattering measurements. Precise theoretical predictions are required to test the limits of our current understanding of particle physics against these new experimental results. The central challenge of obtaining such predictions is the complexity of computing quantum corrections. We introduce a new geometric approach towards this goal. First results show that the geometric nature of our approach significantly simplifies intermediate computational steps, allowing us to go well beyond the state of the art in the field. This approach is expected to initiate many new precision computations for particle colliders, opening the way to an improved understanding of high-energy particle scattering research within the ongoing activities in the Freiburg area.