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Loops for Colliders

physikalisches

Mo. 22.1.24
16:00 Uhr
Ort: H34

Perturbative quantum field theory predicts complex phenomena at particle colliders from basic first principles. By comparing precise high energy data with precise theory predictions, one can probe the fundamental laws of nature down to very small distances, and identify possible signals of physics beyond the standard model of particles.

In this colloquium, I show how calculating multiloop scattering amplitudes enables a concise interpretation of measurements at the Large Hadron Collider. I emphasize how a better understanding of the underlying mathematical structures and the adoption of new computational techniques have recently pushed the frontier in perturbative predictions.

