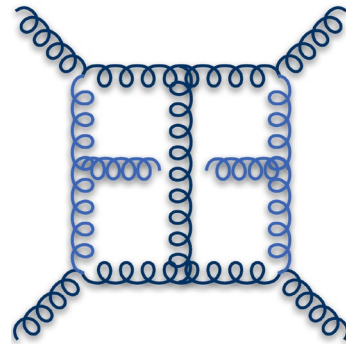


Physics Colloquium Mainz

26 November 2024 at 16 c.t.

Lecture room KPH,
Johann-Joachim-Becher-Weg 45, JGU

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 higher order quantum corrections enables a concise interpretation of measurements at the Large Hadron Collider and other facilities. I illustrate how a better understanding of the underlying mathematical structures and the adoption of new computational techniques have pushed the frontier in theoretical predictions.

Loops for Colliders

Andreas von Manteuffel

University of Regensburg

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