PHYSIKALISCHES KOLLOQUIUM

Wintersemester 2024/25

Das Kolloquium findet (soweit nicht anders angegeben) **jeweils montags um 16:15 Uhr in Präsenz im Röntgen-Hörsaal** des Physikalischen Instituts, Hubland Campus Süd, Universität Würzburg **und online via Zoom statt**.
Zugangsdaten siehe https://www.physik.uni-wuerzburg.de/aktuelles/veranstaltungen-aus-der-physik/physikalisches-kolloquium/

11.11.2024

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Scattering Amplitudes: From Collider Physics to Geometry

Abstract

In the past two decades, it has become clear that scattering amplitudes, which constitute fundamental building blocks for physical predictions in quantum field theory, can be reinterpreted in purely geometrical terms. This geometrical picture is ubiquitous, and it has far-reaching consequences. On the one hand, it has allowed us to devise new computational tools that have revealed extraordinary powerful to solve previously out-of-reach problems of immediate relevance for particle physics and, more recently, to the theory of gravitational waves. On the other, geometry might also hold the key to re-interpreting fundamental aspects of perturbative quantum field theory and, in this way, offer us a novel understanding of long-lasting conceptual and practical problems in the foundations of this framework. In this talk, I will review some of these developments, focusing on the explicit connection between scattering amplitudes and geometry in the explicit context of collider physics.

Für die Dozentinnen bzw. Dozenten der Fakultät

Prof. Dr. Porod, Prof. Dr. Hinkov, Dr. Leisegang, Dr. Ünzelmann, Hr. Baumbach