PHYSIKALISCHES KOLLOQUIUM

Wintersemester 2022/23

Das Kolloquium findet (soweit nicht anders angegeben) **jeweils montags um 17:15 Uhr in Präsenz im Röntgen-Hörsaal des Physikalischen Instituts, Hubland Campus Süd, Universität Würzburg und online via Zoom statt.**

Link zum Zoom-Raum:
https://go.uniwue.de/physkolloqzoom

30.01.2023

Prof. Dr. Klaus Desch
Universität Bonn, Experimentelle Teilchenphysik - Physikalisches Institut

Puzzling Particle Physics

Abstract

While rightfully being praised a paramount example of a successful physical theory of the microscopic world, the Standard Model of Particle Physics must be incomplete. It remains consistent when extrapolated to energies as high as the Planck scale, however, it remains evidently not correct. Evidence and hints for its incorrectness arise from observations and experiments. While there is no simple proof (yet) that the energy scale at which the cause of this incorrectness will be revealed is within reach of the next generation of experiments, there is also no proof of the opposite. It is often believed that searching for new particles at the highest accessible energy scales using colliders is the most promising approach. I will argue that both energy frontier facilities and precision experiments at lower scales have to be performed to find hints for physics beyond the Standard Model. Driven by the conjecture that fundamental scalar particles are particularly promising to reveal New Physics, in my colloquium I will focus on recent results regarding (pseudo)scalar particles: the (existing) Higgs boson and the (hypothetical) Axion. If there is time, I will also try to give an outlook for the field covering the next decade and beyond.

Für die Dozentinnen bzw. Dozenten der Fakultät

PD. Dr. Meyer, Prof. Dr. Assaad, Dr. Feichtner und Hr. Kögel

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