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A tour to subatomic world through precision quantum chromodynamics

physikalisches

Mo. 23.1.23
 16:00 Uhr
 Ort: H34

The quest for our understanding of the behaviour of the fundamental constituents of matter has been going on for several centuries. In describing the behaviour of all non-gravitational phenomena in our Nature, the Standard Model (SM) of particle physics is the most successful candidate. It is a theory based on the principles of quantum mechanics.

Despite its spectacular success, it is quite evident that it is not complete - Nature exhibits phenomena that are not describable through the SM. However, while several indirect shreds exist, the lack of direct evidence has led us to examine the SM with an eagle eye. This exploration depends upon our ability to develop powerful high-energy colliders and our capability to perform precise theoretical calculations.

In this colloquium, we will be acquainted with state-of-the-art techniques to perform precision calculations in perturbative quantum chromodynamics and its indispensable role in the development of our understanding of the fundamental behaviour of Nature.

