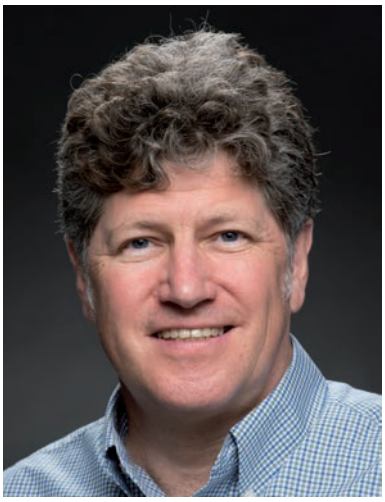
Kolloquium

physikalisches



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Quantum chromodynamics and the origin of mass

Mo. 24.11.14
16:00 Uhr
Ort: H34

The strong interactions of quarks and gluons emerging into hadrons affect the world we see in many ways. For example, the mass of everyday objects stems from these interactions, which we now understand from first principles, namely quantum chromodynamics (QCD). More esoteric phenomena, such as the different reaction rates of matter and antimatter, are influenced by QCD effects too. These features arise at long distances, where QCD is nonperturbative and, thus, very challenging. This colloquium discusses this range of phenomena and the tools used, establishes their nature from QCD, and shares some perspective on some pending problems in particle physics, nuclear physics, and astrophysics.