Martin Reuter, J Astrophys Aerospace Technol 2017, 5:3 (Suppl)
DOI: 10.4172/2329-6542-C1-011

Asymptotic safety in quantum gravity: Renormalizability and beyond

Martin Reuter
University of Mainz, Germany

In this talk a general introduction to the main ideas and achievements of the asymptotic safety approach to quantum gravity will be given. In particular the functional renormalization group for gravity is briefly reviewed. The asymptotic safety program aims at constructing a consistent quantum field theory of gravity and spacetime geometry which complies with a number of indispensable physical principles such as Hilbert space positivity and background independence in addition to nonperturbative renormalizability. We will discuss recent work on some of these requirements in a simplified two-dimensional setting where the tools of conformal field theory are available.

Biography

Martin Reuter has worked at the European Center of Particle Physics CERN and the German DESY laboratory before becoming a Professor of Theoretical Physics at the University of Mainz in 1997.

reuter@thep.physik.uni-mainz.de

Notes: