

Quantengravitation-Seminar

Dec. 17, 2012 at 4 p.m.
Sozialraum der THEP; Institut für Physik (05-427)

Note: Bitte genaue Uhrzeit beachten: 16:00 [s.t.(!)]

Dr. Astrid Eichhorn
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Challenges for a UV completion of gravity

I will discuss challenges for a UV completion of gravity in the continuum path-integral framework.

First, I will use axion electrodynamics as an example to point out that besides fixed points and limit cycles, another type of UV completion might exist for QFTs. I will then focus on the asymptotic-safety scenario in gravity and discuss the properties of the Faddeev-Popov ghost sector in the non-perturbative regime. I will then address coupling matter degrees of freedom into quantum gravity, using the example of a scalar field. Finally, I will discuss the main challenge of any physical theory, namely its testability in experiments and point out how quantum gravity can be tested at accelerators beyond the LHC.