

Prof. Dr. Martin Reuter  
University of Mainz



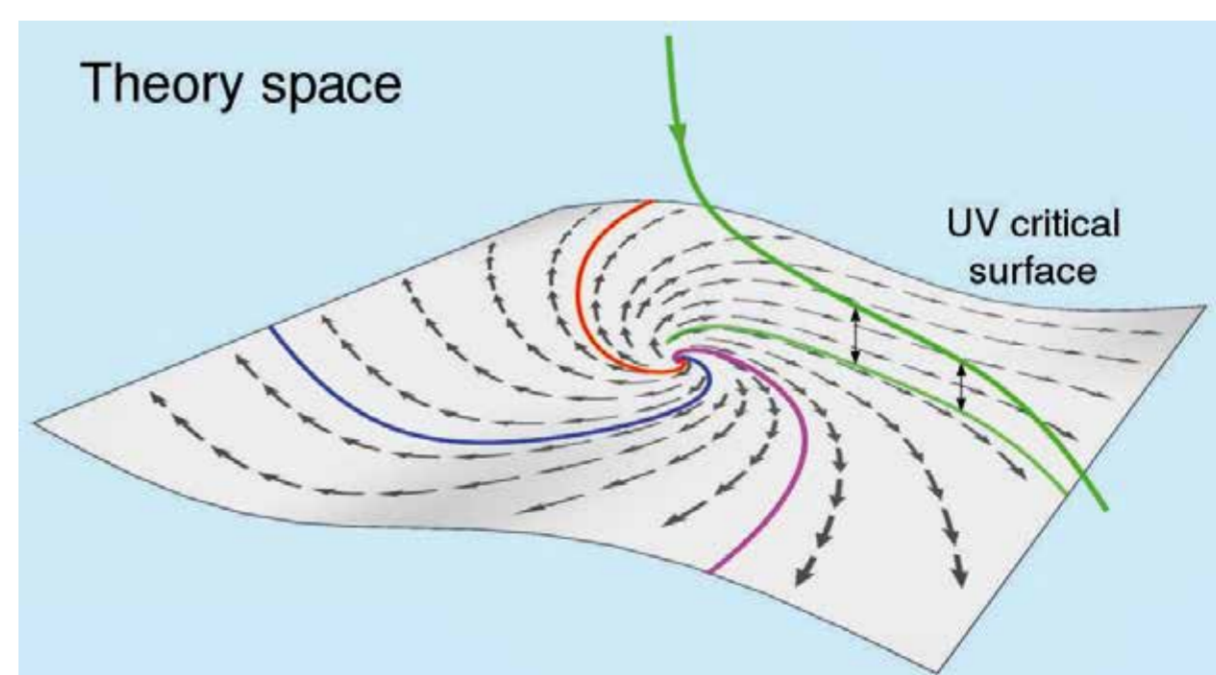
## Asymptotic Safety: towards a fundamental quantum field theory of gravity

physikalisches

While General Relativity provides an excellent effective theory of gravity, it is well known to be non-renormalizable when quantized within perturbation theory. The Asymptotic Safety program instead aims at the construction of a non-perturbatively renormalizable quantum theory of the gravitational field and the geometry of spacetime that would be consistent and predictive on the shortest possible length scales even.

The talk will give an elementary introduction to the basic ideas underlying Asymptotic Safety, in particular the notion of non-perturbative renormalizability, and the methods which are used in order to explore it. The main results obtained so far will also be summarized.

Mo. 23.01.17  
16:00 Uhr  
Ort: H34



Above: Renormalization group trajectories in the infinite dimensional theory space near a fixed point (Credits: Wikipedia.org)