

Physics Colloquium Mainz

July 16, 2024 at 16 c.t.

Lecture room KPH,
Johann-Joachim-Becher-Weg 45, JGU

Fusing the principles of general relativity and quantum mechanics in a consistent theoretical framework still constitutes one of the main open challenges in theoretical physics today. Over the last decades, the gravitational asymptotic safety program has taken significant steps towards achieving this goal. A central virtue, driving the success of the approach, is its conservative nature: the program builds on well-established principles of quantum field theory and extends them in a rather minimalistic way. In this talk, we will review the key developments in the program, building up to its present status. I will also attempt to give an outlook on the challenges that need to still be addressed in the future.

**Asymptotic Safety – Past, Present, and
Future**

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