

Title: Matter matters in asymptotically safe quantum gravity

Abstract: I will discuss the asymptotic safety scenario, which provides a way to construct a quantum field theory for gravity. This scenario relies on an interacting fixed point of the Renormalization Group flow, generalizing the idea of asymptotic freedom, which is well-known from the Standard Model of particle physics. I will focus on the impact of dynamical matter degrees of freedom on the scenario. In particular, I will discuss whether future observations of new particles, e.g. at the LHC or future colliders, could be used to rule out this quantum gravity model.