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Asymptotically safe gauge-gravity systems

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Asymptotically safe quantum gravity might cure the Landau pole of the Abelian hypercharge-sector of the Standard Model by adding a screening contribution to its scale-dependence, ultimately rendering it asymptotically free. On the other hand, gravitational fluctuations also induce higher order gauge-field operators, which cannot be set to zero consistently at high energies. These can lead to constraints on the gravitational parameter space from consistency conditions in the UV and in the IR. In this talk, I will review key aspect of the gauge-gravity system, and assess their robustness under changes of the gauge, and regulator, and upon extensions of the truncation.

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