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Asymptotically Safe Cosmology

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Asymptotic Safety was proposed by Weinberg as a novel way to deal with quantum gravity. Einstein theory of gravity is in principle not renormalizable, however, one need not run the couplings to Planck scale if there is a non-trivial fixed point for the couplings. All the beta functions of the theory should vanish at this fixed point rendering signs for a conformal theory. Hence, the beta functions for the gravitational theory are related to the conformal anomalies. In this talk, I will discuss how ideas from asymptotic safety can be handy in our understanding of the early universe, be it the scale invariance of the CMB power spectrum or the conformal singularity at the bang. This is based on work with Latham Boyle and Neil Turok at the University of Edinburgh.

Primary author: Mr VAIBHAV, Vatsalya (University of Edinburgh)

Presenter: Mr VAIBHAV, Vatsalya (University of Edinburgh)

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