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## Functional renormalization for the beginning and the present Universe

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Functional renormalization for quantum gravity with a scalar field computes at the fixed point the scaling solution for the effective scalar potential for the whole range of the scalar field. Similarly, one investigates the scaling solution for the scalar-field-dependent effective Planck mass (coefficient function of the curvature scalar). The solution of the field equations derived from the corresponding effective action determines the cosmology. The region of small scalar field values leads to an inflationary cosmology at the beginning of the Universe. The large field region describes dynamical dark energy in the present Universe, with a cosmological constant that vanishes in the infinite future. Between the two limits the field-dependent couplings of the scaling solution account for the running couplings in the scale invariant standard model of particle physics. No flow away from the scaling solution may be needed.

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