

*DE MADRID AL COSMOS*

# Anomaly-induced effective action and Starobinsky model of inflation

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**Lugar:**

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**Abstract:** The effective action of gravity contains the main information about quantum effects, but in most cases it can not be calculated exactly. An important exception is the one-loop effective action for massless conformal invariant matter fields, which can be obtained by integrating trace anomaly. The integration constant is an arbitrary conformal functional of the background metric, but for the zero-order cosmology this functional is irrelevant and the solution becomes exact. The most important applications include systematic classification of vacuum states in the vicinity of the black hole and the Starobinsky model of inflation. The last is based on the non-local anomaly-induced metric, however the most relevant part is a local term which is just a square of the scalar curvature. The modified version of the model does not require special choice of initial conditions and is based on the interpolation between stable and unstable inflationary solutions.