

The overshoot problem in inflation after tunneling

Within the context of the string theory landscape, inflation may happen after tunneling from a false vacuum onto a (possibly steep) slope. The field will be generically slowed down by the curvature dominated friction term. It has been argued from toy models of linear potentials that this may be insufficient to provide for a slow roll regime lest the potential is sufficiently flat for a large field range. This overshoot problem seems to exclude small field inflation models after tunneling events.

We extend the analysis to monomial potentials of arbitrary integer order. For orders 2 and 3 we give estimates of amount of overshoot. In contrary to this, for monomial potentials of order 4 and higher, the terminal velocity at the bottom of the potential is zero, allowing for small field inflation after tunneling.

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