

# Critical properties of the gravitational Wilson-Fisher fixed point

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Phase transitions in three dimensions, described by the Wilson-Fisher fixed point, play a pivotal role in condensed matter physics and may also have significant implications for the physics of the Early Universe. In this context, using the most general theory coupling scalar fields non-minimally to Einstein gravity and exploiting the proper-time functional renormalization group equation, we investigate how Einstein gravity modifies the Wilson-Fisher fixed point and the dynamics near this fixed point. Specifically, we demonstrate how scaling solutions, their perturbations, and critical exponents are influenced by these effects.

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