

## The Modern Physics of Compact Stars and Relativistic Gravity

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### Quantum effects from boundaries in de Sitter and anti-de Sitter spacetimes

Vacuum expectation values of the field squared and the energy-momentum tensor for scalar and fermionic field are investigated in de Sitter and anti-de Sitter spacetimes in the presence of flat and spherical boundaries. The dependence of the Casimir forces on the bulk and boundary geometries is discussed. It is shown that the curvature of the background spacetime decisively influences the behavior of these forces at separations larger than the curvature scale of the bulk. Applications to the problems of the radion stabilization and the cosmological constant generation are given in Randall-Sundrum-type braneworld scenarios.

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