

*Abstract*

# Noether's Symmetries in Quantum Cosmology <sup>†</sup>

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We discuss the Hamiltonian dynamics for cosmologies coming from theories of gravity. In particular, minisuperspace models are taken into account searching for Noether symmetries. The existence of conserved quantities gives selection rules to recover classical behaviors in cosmic evolution according to the so-called Hartle criterion, that allows to select correlated regions in the configuration space of dynamical variables. We show that such a statement works for general classes of Theories of Gravity and is conformally preserved. Furthermore, the presence of Noether symmetries allows a straightforward classification of singularities that represent the points where the symmetry is broken. Examples for nonminimally coupled and higher-order models are discussed.



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