

## Continuous Quantum Nondemolition Measurements of a Particle in Electromagnetic and Gravitational Fields

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**Abstract:** The detection of a particle in electromagnetic plus gravitational fields is investigated. We obtain a set of quantum nondemolition variables. The continuous measurements of these nondemolition parameters are analyzed in the framework of restricted path integral formalism. We manipulate the corresponding propagators, and deduce the probabilities associated with the possible measurement outputs.

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**Key words:** continuous quantum nondemolition measurements, restricted path integral

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