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Departamentos de Física Teórica I y II
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TITULO: Detectors for probing field theory beyond perturbation theory

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ABSTRACT:

In this talk I will discuss a detector model that can be used to study relativistic quantum phenomena within cavity settings, and importantly without resorting to perturbation theory (as is done in typical Unruh-Dewitt detector setups). Going beyond perturbation theory is important, for example, in thermalization effects. In our model the evolution of the detector(s)+field can be solved exactly using the utility of Gaussian quantum mechanics. After explaining the framework itself I will go on to discuss several of the scenarios that have been studied using it, such as the Unruh effect in a cavity and quantum entanglement harvesting from the vacuum, as well as entanglement "farming" [PRA 88, 052310 (2013)]. Primary reference: PRD 87, 084062 (2013).