INFN Istituto Nazionale di Fisica Nucleare

UNIVERSITÀ DEGLI STUDI DI TRIESTE

INFN Sezione di Trieste & Dipartimento di Fisica

Joint Seminar

Dr. Antoine Tilloy

Max Planck Institute of Qunatum Optics, Munich, Germany

Tuesday February 6, 2018 – 3:00 PM – Room 204
Leonardo Building – Strada Costiera, 11, Trieste

Ghirardi -Rimini-Weber Model with massive flashes

Abstract

Huge amounts of efforts are currently invested in trying to quantize gravity. But are we really sure that gravity should be quantum at the fundamental level? Is it possible, even only in principle, to have a hybrid theory where quantum matter and a classical space-time coexist? Historically, semiclassical gravity has been dismissed for various more or less convincing reasons. However, I will show a simple toy model that bypasses the historical no go arguments and thus makes the case that semiclassical gravity should be reconsidered. During my talk, I will recall the usual arguments for quantum gravity. I will then introduce the Ghirardi-Rimini-Weber collapse model, the simplest collapse model most of you probably know. I will then explain how gravity can be implemented in this model in a way that would be impossible in orthodox quantum theory. I will finally discuss the predictions of such a hybrid theory.

Organization by: Prof. A. Bassi

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Everyone interested in the topic is welcome to attend