

## Dissipative extension of the Ghirardi-Rimini-Weber collapse model

*Wednesday, 30 April 2014 12:30 (30 minutes)*

In this talk, I present a possible extension of the GRW collapse model [1,2], which avoids the infinite growth of the energy of the system. New jump operators are introduced, while the other defining features of the model are left unchanged. The jump operators correspond to the Fourier transform of the Lindblad operators of a model for collisional decoherence [3] and they depend on the momentum of the system. The resulting dissipative evolution is described in detail, with emphasis on the exponential relaxation to a finite asymptotic value of the energy, common to other collapse models with dissipation [4]. The trajectories of the model are investigated, as well, verifying the occurrence of position and momentum localization. Finally, the amplification mechanism is discussed and it is shown that the center of mass of a macroscopic rigid body behaves for all the practical purposes according to classical mechanics.

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[3] B. Vacchini, Phys. Rev. Lett. 84, 1374 (2000)

[4] A. Bassi, E. Ippoliti, and B. Vacchini, J. Phys. A: Math. Gen. 38, 8017 (2005)

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