

SAIP2014



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Hamiltonian approach to open quantum Brownian motion.

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Abstract :

The microscopic derivation of Open Quantum Brownian Motion (OQBM) is presented [1,2]. OQBM is obtained as a special limit (scaling limit) of the recently introduced Open Quantum Walks [3,4]. The quantum master equation for OQBM is derived for a weakly driven system interacting with the decoherent environment. Examples of the dynamics for initial Gaussian and non-Gaussian distributions are presented. [1] M. Bauer, D. Bernard and A. Tilloy, Phys. Rev. A 88(2013), 062340.[2] M. Bauer, D. Bernard and A. Tilloy, The Open Quantum Brownian Motion, math-ph/1312.1600.[3] S. Attal, F. Petruccione and I. Sinayskiy, Phys. Lett. A 376 (2012), 1545.[4] S. Attal, F. Petruccione, C. Sabot and I. Sinayskiy, J. Stat. Phys. 147 (2012), 832.

Award :

No

Level :

PhD

Paper :

Yes

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