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Decay and Entanglement with Reservoir Structures

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Abstract:

Static reservoir structures coupled to simple quantum systems can be analysed by the method of "pseudomodes", where the reservoir structure is replaced by an effective mode [1]. The approach can be useful for strongly coupled, i.e. non-Markovian problems. A brief introduction to this theory will be given together with recent results on reservoir memory [2] and entanglement in the reservoir [3].

[1] B.M. Garraway, Phys. Rev. A 55, 4636 (1997).

[2] L. Mazzola, S. Maniscalco, J. Piilo, K.-A. Suominen, and B.M. Garraway, Phys. Rev. A. 80, 012104 (2009).

[3] C. Lazarou, B.M. Garraway, J. Piilo, and S. Maniscalco, arXiv:1008.2621.