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Entanglement dynamics in an oscillating bipartite Gaussian state coupled to reservoirs with different temperatures

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<p>An entangled bipartite Gaussian state is coupled to two thermal reservoirs, one for each particle. A harmonic oscillation is allowed between the two particles. The reservoirs are assumed to have different temperatures and to be coupled to the particles with different coupling strengths. This allows for a realistic situation where a bipartite state may be shared between two parties who "keep" their part in different environments. A master equation, previously derived in the non-rotating wave approximation, is solved for the system. The effects of a variation in the bath temperature on the entanglement, as well as that of the variation in coupling strengths are shown. For high temperatures, the entanglement vanishes if the coupling strength is large, whereas for low temperatures, the effect is reversed and it survives longest for a stronger coupling strength. The stationary dynamics of the system is also examined.

Level (Hons, MSc,
   PhD, other)?

Postdoctoral Fellow

Consider for a student
   award (Yes / No)?

No

Would you like to
 submit a short paper
 for the Conference
 Proceedings (Yes / No)?

Yes

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