

A NO-GO THEOREM ON THE NATURE OF THE GRAVITATIONAL FIELD BEYOND QUANTUM THEORY

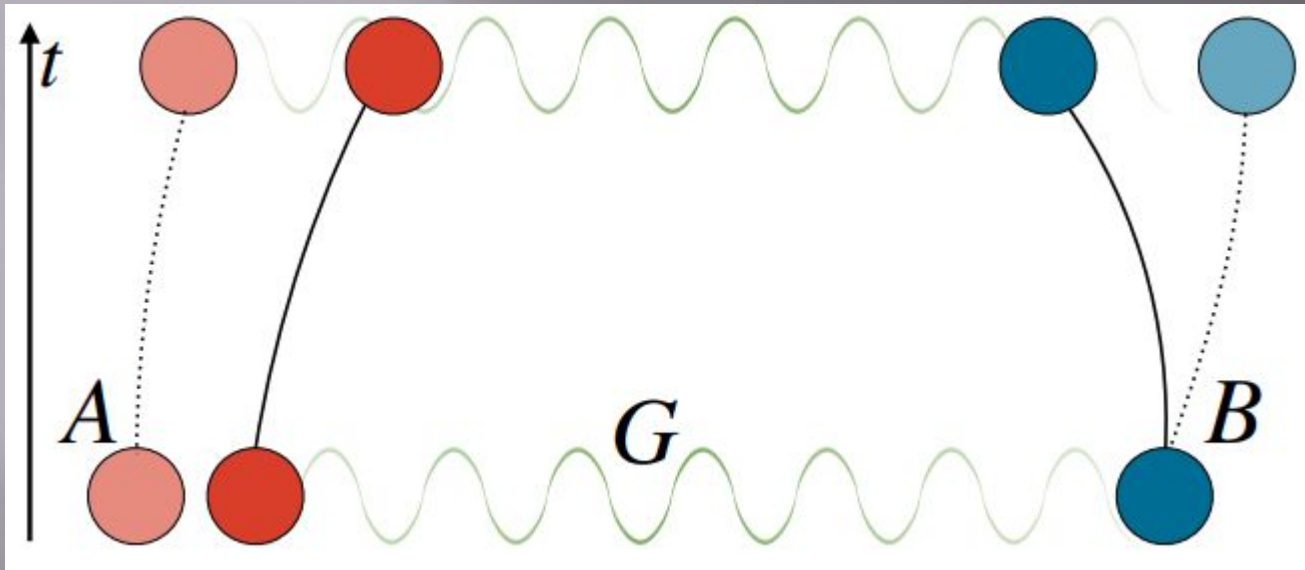
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Plan

- Introduction
- Theory independent framework.
The concept of GPT
- Theorem.
- Discussion of conditions
- Conclusion

Illustration of the experimental situation.



Two masses A and B are initially prepared in a separable state.

The masses interact via the gravitational field G . After some time, the full state becomes entangled.

Theorem

- ▣ We consider two non-classical systems A and B , initially in a separable state, and some unknown field G . If, after some time t , entanglement between the systems A and B is observed, then the following statements are incompatible:
 1. Subsystem independence of A and B ;
 2. A and B interact locally via the mediator G ;
 3. G is classical

Conclusion

- ▣ -Introduce the concept of GPT(General Probabilistic Theories)
- ▣ -Formulated the theorem about entanglement of two non-classical systems
- ▣ - Have pointed out the existence of post quantum systems