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

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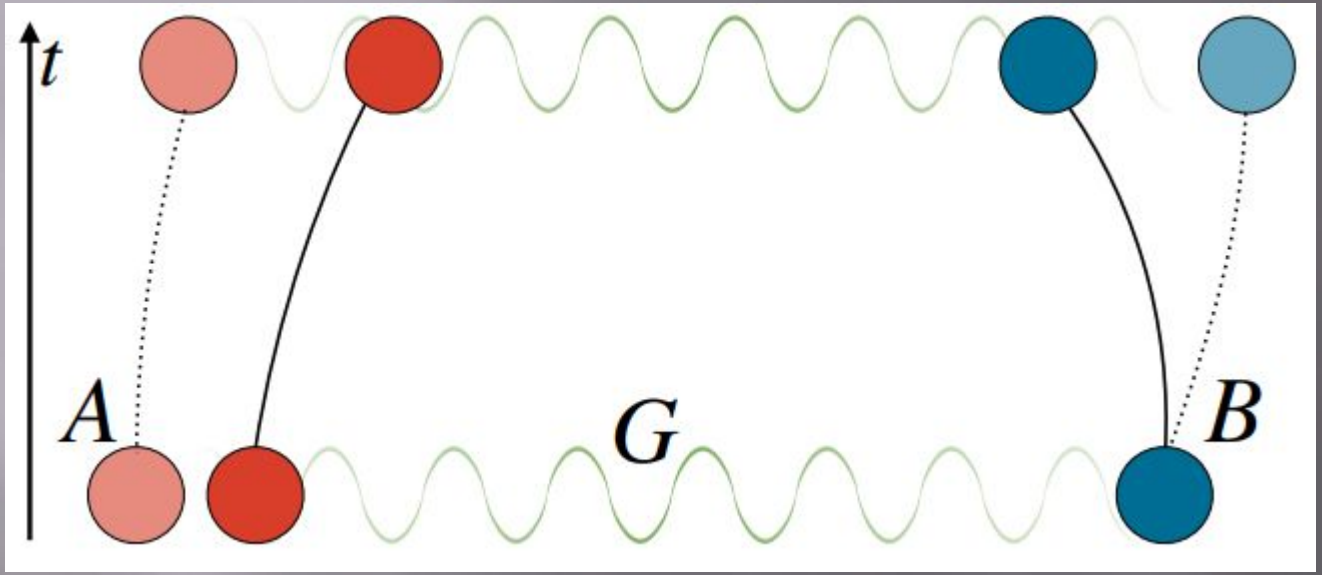
Plan

- 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