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Correlation between entangled states as measured from accelerated world lines.

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Abstract content (Max 300 words)
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In this work we calculate the correlation function of two entangled particles in accelerated frames. We find no extra phase shifts when one of the entangled particles are accelerated uniformly from rest. However, by the equivalence principle of general relativity, constant acceleration can also have the same effect on a body as a gravitational field does without acceleration. So, we also compare the results to those of a paper which does find a phase change between entangled particles in a gravitational field. We consider the possibility that acceleration could result in a phase change if the particle has a non-zero initial velocity and the acceleration is such that it changes the direction of the particle motion.

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Yes

Level for award (Hons, MSc, PhD)?

PhD

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yes

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