

Abstract Submitted
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Quantum Entanglement and the Generalized Uncertainty Principle FRANCISCO HERRERA, JOSHUAH CEYANES, GARDO BLADO, Houston Baptist University — We study the effects of the Generalized Uncertainty Principle on quantum entanglement by studying the modified uncertainty relation of two identical entangled particles [1] and the inseparability condition [2]. Rigolin showed a decrease (from the usual) in the lower bound in the product of the uncertainties of the position and momentum of two identical entangled particles. Duan, et.al. derived an inseparability condition for a pair of EPR-type operators for continuous variables. In both cases, the GUP correction resulted in a higher lower bound from Rigolin's result and a higher upper bound for the inseparability condition in Duan's relation. In the case of Rigolin's result, the GUP correction decreases the disagreement with the HUP while in Duan's case the inseparability and entanglement condition are enhanced. [1] G. Rigolin, *Found. Phys. Lett.* 15, 293 (2002), arxiv quant-ph/0008100; (2001) arxiv quant-ph/0105057 [2] L. Duan, G. Giedke, J. I. Cirac, and P. Zoller, *Phys Rev Lett* 84, 2722 (2000)

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