

BENEMÉRITA UNIVERSIDAD AUTÓNOMA DE PUEBLA



**INSTITUTO DE FÍSICA
“Luis Rivera Terrazas”**



**SEMINARIO
“DR. JESUS REYES CORONA”**

“Planck-scale traces from the interference pattern of two Bose-Einstein condensates”

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We analyze the possible effects arising from the Planck scale regime upon the interference pattern of two noninteracting Bose-Einstein condensates. We start with the analysis of the free expansion of a condensate, and have taken into account the effects produced by a deformed dispersion relation, suggested in several quantum-gravity models. The analysis of the condensate free expansion, in particular, the modified free velocity expansion, suggests in a natural way, a modified uncertainty principle that could lead to new phenomenological implications related to the quantum structure of space-time. Finally, we analyze the corresponding separation between the interference fringes after the two condensates overlap, in order to explore the sensitivity

**Auditorio-IFUAP
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13:00 Hrs.**