

VII Leopoldo García-Colín Mexican Meeting on Mathematical and Experimental Physics



Contribution ID: 41

Type: **not specified**

JOHN FRANCO: Quantum gravimetry insensitive to external disturbances using composite light pulses

Monday, 17 February 2020 16:00 (30 minutes)

We introduce an atomic gravimetric sequence using Raman-type composite light pulses that excites a superposition of two momentum states with the same internal level. The scheme allows the suppression of common noise, making it less sensitive to external fluctuations of electromagnetic fields. The Raman beams are generated with a fiber modulator and are capable of momentum transfer in opposite directions. We obtain analytical expressions for the interference fringes in terms of three perturbative parameters that characterize the imperfections due to undesired frequencies introduced by the modulation process. We find special values of the Rabi frequency that improve the fringes visibility.

Session Classification: SHORT TALKS

Track Classification: SYMPOSIUM ON SCATTERING, QUANTUM AND CLASSICAL TRANSPORT