PHYSICAL MATHEMATICS SEMINAR

Modeling a Bose-Einstein Condensate Interferometer

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ABSTRACT:

The realization of Bose-Einstein condensates (BECs) has revolutionized atomic physics. BECs allow the observation of striking quantum effects, such as matter-wave interference, on macroscopic scales. This BEC interference can also be leveraged to make extremely accurate measurements of fundamental constants. In this talk, I will outline the various mathematical descriptions of a BEC. I will focus on techniques, such as analytic reductions of the nonlinear Schrodinger equation, for extremely accurate models that are useful to high-precision interference measurements. Finally, I will discuss current experiments with other ultra-cold atom systems in the Ketterle group.

TUESDAY, DECEMBER 1, 2015
2:30 PM
Building E18, Room 466A

Reception following in Building E17, Room 401A
(Math Dept. Common Room)

http://math.mit.edu/pms/

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