Abstract Submitted
for the MAR08 Meeting of
The American Physical Society

Interference between atomic Bardeen-Cooper-Schrieffer gases TUN WANG, Austrian Academy of Science, SUSANNE YELIN, Univ. of Connecticut — We study the interference between two atomic Bardeen-Cooper- Schrieffer (BCS) gases using noise correlations. Fringes as seen in the interference between two Bose-Einstein Condensates (BECs) do not to exist due to the requirement that two BCS gases have to initially overlap to interfere. This requirement results from the fact that the spin up and spin down fermions in a Cooper pair have opposite momenta. Nevertheless, BCS gases still interfere with each other, and their interference patterns share many aspects with those of BECs.

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Date submitted: 26 Nov 2007 Electronic form version 1.4