Abstract Submitted
for the MAR15 Meeting of
The American Physical Society

Detecting fractional statistics in anyon interferometry employing thermal excitation CHEOLHEE HAN, HEUNG-SUN SIM, KAIST — In this work, we propose an interferometry setup of anyons, a setup slightly modified from a usual Fabry-Perot interferometry.[1] In this interferometry, there appears anyon braiding between thermally excited anyons and an anyon injected from a source of the setup. This braiding process, which has unnoticed before and does not exist in bosons and fermions, results in a temperature dependent phase shift of the interference pattern of the setup. Experimental observation of the phase shift will provide a direct evidence of fractional statistics.

[1]D. C. Chamon, D. E. Freed, S. A. Kivelson, S. L. Sondhi, X. G. Wen, Phys. Rev. B **55**, 2331 (1997)

Cheolhee Han
KAIST

Date submitted: 12 Nov 2014 Electronic form version 1.4