Abstract Submitted
for the MAR14 Meeting of
The American Physical Society

**Superconductor with intrinsic topological order induced by Coloumb repulsion** EVELYN TANG, XIAO-GANG WEN, MIT/ Perimeter Institute — We study a lattice system which at commensurate fillings supports fractional quantum Hall states; here we explore what happens at incommensurate fillings. As excitations are believed to be anyons, we assume that doping the system creates a finite density of anyon excitations. The presence of a lattice allows access to a new regime in which the anyon kinetic energy dominates. This leads to a gas of anyons which can condense to form a charged superfluid, driven by repulsive interactions and time-reversal symmetry breaking. We find ground states including those with intrinsic topological order, i.e. containing fractionalized quasiparticles. The relative stability of these states are compared using different flux-attachment approaches; lastly we discuss their physical properties and methods for experimental detection.

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Date submitted: 15 Nov 2013 Electronic form version 1.4