



Contribution ID: 1031
compétition)

Type: Oral (Student, Not in Competition) / Orale (Étudiant(e), pas dans la

Chiral spin liquid from magnetic Wannier states

Wednesday 15 June 2016 16:15 (15 minutes)

We present a mapping of a two-dimensional system of interacting bosons in a strong perpendicular magnetic field to an equivalent system of interacting bosons on the square lattice in the absence of the field. The mapping utilizes a magnetic Bloch and the corresponding magnetic Wannier singleparticle basis in the lowest Landau level. By construction, the ground states of the resulting model of interacting bosons on the square lattice are gapped fractionalized liquids or gapless Bose metal states with broken time reversal symmetry at specific rational filling fractions.

Primary author: PANFILOV, Ivan

Co-authors: Mr PATRI, Adarsh (University of Waterloo); Prof. BURKOV, Anton (University of Waterloo); Prof. YANG, Kun (Florida State University)

Presenter: PANFILOV, Ivan

Session Classification: W3-3 Quantum Transport (DCMMP) / Transport quantique (DPMCM)

Track Classification: Condensed Matter and Materials Physics / Physique de la matière condensée et matériaux (DCMMP-DPMCM)