

Abstract Submitted
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Novel Quantum States of Bosons in Moat Bands TIGRAN SEDRAKYAN, Fine Theoretical Physics Institute, University of Minnesota, LEONID GLAZMAN, Department of Physics, Yale University, ALEX KAMENEV, Fine Theoretical Physics Institute, University of Minnesota — We study hard-core bosons on a class of frustrated lattices with the lowest Bloch band having a degenerate minimum along a closed contour in the reciprocal space – the Moat. We suggest that the ground state of the system is given by non-condensed state, which may be viewed as a state of fermions subject to Chern-Simons gauge field. At fixed density of bosons, such a state exhibits domains of incompressible liquids. Their fixed densities are given by fractions of the reciprocal area enclosed by the minimal energy contour.

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