

Abstract Submitted  
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**Topological quantum crystals in the lowest Landau level** CHIA-CHEN CHANG, GUN SANG JEON, JAINENDRA JAIN, Department of Physics, The Pennsylvania State University — There has been much interest in the crystal phase produced when electrons in two dimensions are subjected to a strong magnetic field. By comparing to exact solutions for finite systems, we demonstrate that the composite-fermion crystal, wherein quantized vortices are bound to electrons, provides an excellent representation of the actual crystal. The optimal number of vortices tied to an electron in the crystal increases as the filling factor is reduced; numerical evidence is seen for as many as 38 vortices bound to each electron. The quantum mechanical and topological nature of the crystal may have observable consequences, which will be discussed.

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