

Abstract Submitted
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Nucleation and growth of vortical Wigner molecules in a rotating BEC.¹ OLEG VOROV, Drake University, PIET VAN ISACKER, G.A.N.I.L., MAHIR HUSSEIN, Universidade de Sao Paulo, KLAUS BARTSCHAT, Drake University — An analytic expression for the ground-state wavefunction of a rotating Gross-Pitaevskii condensate of trapped atoms describes the onset of vorticity in an accelerated trap, starting from the vortex entry followed by formation of growing symmetric Wigner molecules [1]. Within a unified picture, it explains the staircase of the angular momentum jumps and the behavior of the bosonic occupancies observed in numerical and variational studies [2-4]. The similarity of this behavior and mesoscopic superconductors is discussed.

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