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Vortex nucleation in a Layered Superconductor[1] PATRICIA SALAS, Posgrado en Ciencia e Ingenieria de Materiales, UNAM, MEXICO, MIGUEL A. SOLIS, Instituto de Fisica, UNAM, Apartado Postal 20-364, 01000 Mexico, D.F., MEXICO — We propose that the paired fermions (electrons) in a layered superconductor, such as cuprates, be treated as interacting bosons in the Bose-Einstein regime. We solve the time dependent Gross-Pitaevskii equation for these bosons inside a rotating layered superconductor which is simulated by an external periodical potential of the Kronig-Penney type perpendicular to the planes while bosons are allowed to be free in the other two directions [1]. Among the several numerical methods that exist to solve the Gross-Pitaevskii Equation, we use a time iteration procedure, based on the discretization of time and space [2]. We annalize the vortex nucleation and its influence in the thermodynamic properties of the superconductor. [1] See M.A. Solis and M. Grether, "Specific heat of bosons among periodical layers," in this proceedings. [2] S. K. Adhikari and P. Muruganandam, J. Phys. B **35**, 2831 (2002).

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