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Bose gas in disordered, finite-layered systems[1] MAURICIO FORTES[2], V.E. BARRAGÁN[3], P. SALAS[4], M.A. SOLÍS[5], Univ Nacl Autonoma de Mexico — Disorder effects in the thermodynamic properties of a Bose gas are analyzed. The gas is confined within a layered box of size L in the z-direction and infinite in the other two directions. The layers are first modeled by a periodic array of M Dirac delta-functions of equal intensity. We investigate the effects on the specific heat, energy and entropy when a random set of vacancies is introduced in the layered array. A dramatic increase in the maximum of the specific heat is observed when the system has a 0.1 to 0.2 fraction of random vacancies compared to the original, periodic array and this maximum, which is reminiscent of a Bose-Einstein condensation for an infinite array, occurs at a higher temperature.

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