

Abstract Submitted  
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**Specific heat for high  $T_c$  superconductors**<sup>1</sup> P. SALAS, Posgrado en Ciencia e Ingenieria de Materiales, UNAM, M. FORTES, F.J. SEVILLA, M.A. SOLIS, Instituto de Fisica, UNAM — In this work we model high- $T_c$  superconductors as a mixture of paired and unpaired electrons within an infinite layered structure [1]. The electron pairs are assumed to be non interacting, zero-spin bosons with a linear dispersion relation while the layers are simulated by a Delta-Kronig-Penney potential in one direction. The unpaired and paired electrons are free to move in the other two perpendicular directions. We use experimental parameters of cuprates to fix the plane separation and adjust the plane “impenetrability” to replicate the superconductor critical temperature as the Bose-Einstein condensate temperature of the electron pairs. The total specific heat, obtained as a sum of the electronic (paired plus unpaired) and lattice specific heat, reproduces the experimental linear behavior of  $C_V(T)/T$  just below  $T_c$ .

[1] P. Salas, M. Fortes, M. de Llano, F.J. Sevilla and M.A. Solís, “*Condensation Bose-Einstein in multilayeres,*” to be published.

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