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Thermodynamic properties of bosons inside nanotubes P. SALAS, Posgrado en Ciencia e Ingenieria de Materiales, UNAM, M.A. SOLíS, Instituto de Física, UNAM — We describe the statistical behavior of an ideal boson gas among periodic channels which are simulated by two perpendicular external Kronig-Penney potential while bosons are allowed to be free in the residuary direction. The critical temperature goes from the 3D ideal boson gas critical temperature to that of a quasi-1D boson gas inside an impenetrable nanotube of square transversal section of wide a, as the wall penetrability ($P = mV_0ab/\hbar^2$) goes from zero to infinity. We also calculate and discuss other thermodynamic properties such as the specific heat.

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