Abstract Submitted
for the MAR05 Meeting of
The American Physical Society

Band-filling Effects on the modified Periodic Anderson Model IGOR KOGOUTIOUK[1], HANNA TERLETSKA[2], ERIC RAYMER[3], Minnesota State University-Mankato — In this research, the thermodynamical properties of the modified periodic Anderson model are investigated. Half-filled symmetrical, half-filled asymmetrical and non-half-filled asymmetrical cases are considered. Using the equation of motion method, we found that the energy spectrum can contain one, three, four or five subbands, depending upon the parameters of the hamiltonian. The dependence of the density of states and specific heat upon the band-filling, temperature and applied pressure is studied. It is shown that change in these parameters can lead to metal-insulator transition and/or to the change of effective mass and type of conductivity. A comparison with the previous theoretical research and experimental data is provided.

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Date submitted: 08 Dec 2004 Electronic form version 1.4