

Abstract Submitted
for the MAR09 Meeting of
The American Physical Society

3D Quantum Dot Density of States in a Magnetic Field N.J.M. HORING, Stevens Institute of Technology, Hoboken, USA, S.Y. LIU, Shanghai Jiaotong University, Shanghai, China, V. FESSATIDIS, Fordham University, Bronx, USA — We have analyzed the detailed quantum dynamics of a 3D quantum dot in a magnetic field. The dot is taken to be lodged in a bulk medium in a high magnetic field and it is represented by a three-dimensional Dirac delta function potential which would support just one subband state if there were no magnetic field. The integral equation for the retarded Green's function of this system is solved in closed form analytically and the single particle subband energy spectrum and the density of states are examined taking account of splintering of the subband spectrum by Landau quantization.

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Date submitted: 17 Nov 2008

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