

Abstract Submitted
for the MAR10 Meeting of
The American Physical Society

Nano-wire in a Magnetic Field N.J.M. HORING, Stevens Institute of Technology, J.D. MANCINI, Kingsborough College of CUNY — We analyze the energy spectrum and propagation of electrons in a quantum wire on a $2D$ host medium in a normal magnetic field. Here, the Hamiltonian term representing the quantum (nano) wire has the form of a one-dimensional Dirac delta function. We derive the associated Schrödinger quantum-wire Green's function in closed form. The energy spectrum is then determined by examination of the frequency poles of the Green's function, with Landau-quantization-like splintering of levels.

Vassilios Fessatidis
Fordham University

Date submitted: 19 Nov 2009

Electronic form version 1.4