Landau Quantization of a 2D Antidot Lattice

N.J.M. HORING, S. BAHRAMI, Stevens Institute of Technology, Hoboken, NJ 07030, VASSILIOS FESSATIDIS, Fordham University, Bronx, NY 10458 — We derive the Schrödinger eigen-energy dispersion relation for a two dimensional sheet of electrons in a one dimensional periodic lattice of quantum antidot potential barriers, with a perpendicular quantizing magnetic field. This system is in the nature of a Krönig-Penney model with a high magnetic field present and we construct the appropriate Green’s function which we use to formulate the dispersion relation for the energy spectrum.