

THRESHOLD SINGULARITIES OF THE SPECTRAL SHIFT  
FUNCTION FOR A HALF-PLANE MAGNETIC HAMILTONIAN

**P. Miranda**

*Department of Physics, P.U. Catholic of Chile*

We study the spectral shift function (SSF) for the pair of operators  $H_0$  and  $H = H_0 + V$ , where  $H_0$  is the Hamiltonian of a  $2D$  particle moving in a half-plane with Dirichlet boundary conditions and subject to a constant magnetic field, while  $V$  is a decaying electric potential which models a localized impurity. We are particularly interested in the asymptotic behavior of the SSF near the Landau levels, which are spectral thresholds in the absolutely continuous spectrum of  $H_0$ . From the direct integral decomposition of the operator  $H_0$  we first obtain the asymptotic properties of the band functions. Then, using A. Pushnitski's representation of the SSF, we construct effective Hamiltonians which govern its main asymptotic behavior near the Landau levels. In the case of compactly supported  $V$ , we describe explicitly the asymptotics of the SSF for energies near and below the Landau levels. This work was partially supported by Fondecyt grant 3120087.