

**THE FOURIER TRANSFORM OF THE CHARACTERISTIC
FUNCTION OF A SET AND ITS RELATION WITH ITS
DIRICHLET EIGENVALUES**

The Fourier transform of the characteristic function of a set plays an important role in telecommunications and image processing. In this talk I will discuss the relation between the zeros of this function and the eigenvalues of the Laplacian (Dirichlet or Neumann) of the same domain. This is joint work with Michael Levitin (Cardiff) and Leonid Parnovski (University College, London).