

Titchmarsh-Weyl functions and scattering matrices

Behrndt J.

(TU Berlin)

`behrndt@math.tu-berlin.de`

In this talk we consider scattering systems consisting of two selfadjoint operators with finite rank resolvent difference. Our main objective is to express the scattering matrix and spectral shift function in terms of the so-called Weyl function (or Krein's Q -function). The Weyl function is a matrix-valued Nevanlinna or Riesz-Herglotz function and can be regarded as the abstract analog of the Titchmarsh-Weyl coefficient from singular Sturm-Liouville theory. The general results on representations of scattering matrices are applied to Sturm-Liouville, Dirac and Schroedinger operators.

The talk is based on the joint works with Mark Malamud and Hagen Neidhardt.