

# **Boundary Value Problems and Differential Operators**

Jussi Behrndt

Technische Universität Graz, Austria  
behrndt (at) tugraz.at

In this lecture series we provide an introduction to extension theory of symmetric operators in Hilbert spaces and its diverse applications to spectral problems for self-adjoint differential operators. One of the main objectives is to discuss the technique of boundary triples and Weyl functions, and to illustrate these methods for Sturm-Liouville operators, Schrödinger operators, and Dirac operators.

The course consists of the following three lectures:

1. Symmetric and self-adjoint operators in Hilbert spaces
2. Boundary triples and applications to differential operators
3. Weyl functions, Krein's resolvent formula, and spectral analysis