

IAN WOOD (UNIVERSITY OF KENT, UK)

SPECTRAL INFORMATION CONTAINED IN ABSTRACT  $M$ -FUNCTIONS

The Weyl-Titchmarsh  $m$ -function is an important tool in the study of forward and inverse problems for ODEs, as it contains all the spectral information of the problem. In this talk we will consider the abstract operator  $M$ -function or Weyl-function which can be introduced using the abstract setting of boundary triples for an adjoint pair of operators. Our aim is to study how much spectral information is still contained in the  $M$ -function in this more general setting, in particular for the case of non-selfadjoint operators. Boundary triples allow for the study of PDEs, block operator matrices and many other problems in one framework. We will discuss properties of  $M$ -functions, their relation to the resolvent and spectrum of the associated operator and consider several examples.