Inverse Problems Network Meeting 5

Thursday, 23rd May 2019 - Friday, 24th May 2019

University of Kent

Abstract of Talk

CONTINUED FRACTION EXPANSIONS AND GENERALIZED INDEFINITE STRINGS

Dr J Eckhardt

Loughborough University/University of Vienna

Stieltjes continued fraction expansions play a decisive role in the solution of the inverse spectral problem for Krein strings. Certain continued fractions of a modified form correspond in the same way to generalized indefinite strings. I will discuss under which conditions Herglotz-Nevanlinna functions allow such an expansion and use this to solve the inverse spectral problem for generalized indefinite strings with coefficients supported on a discrete set. The results are related to the Hamburger moment problem and multi-soliton solutions of particular nonlinear wave equations.