A Borg-type theorem associated with orthogonal polynomials on the unit circle

Maxim Zinchenko

Univ. of Missouri-Columbia, USA

We prove a general Borg-type result for reflectionless unitary Cantero-Moral-Velázquez (CMV) operators U associated with orthogonal polynomials on the unit circle. The spectrum of U is assumed to be a connected arc on the unit circle. This extends a recent result of Simon in connection with a periodic CMV operator with spectrum the whole unit circle.

In the course of deriving the Borg-type result we also use exponential Herglotz representations of Caratheodory functions to prove an infinite sequence of trace formulas connected with the CMV operator U.

This is joint work with F. Gesztesy.