

An almost periodic model for general reflectionless spectral data

Roman Bessonov

St. Petersburg State University

bessonov@pdmi.ras.ru

A basic feature of second order almost periodic differential and finite-difference operators is the reflectionless property of their Weyl functions. Conversely, each regular enough pair of reflectionless Nevanlinna functions generate an almost periodic operator on the real line whose half-line Weyl functions coincide with the given pair. Until recently, for operators with unbounded spectra, this scheme worked under quite restrictive assumptions on the "quality" of the spectrum. We extend it to cover all homogeneous spectra, and, more generally, to all (possibly, unbounded) spectra satisfying Widom and DCT conditions. Joint work with M. Lukic and P. Yuditskii.