Muckenhoupt Hamiltonians, triangular factorization, and Krein orthogonal entire functions

Abstract

According to classical results by M. G. Krein and L. de Branges, for every positive measure \( \mu \) on the real line \( \mathbb{R} \) such that \( \int_{\mathbb{R}} \frac{d\mu(t)}{1+t^2} < \infty \) there exists a Hamiltonian \( H \) such that \( \mu \) is the spectral measure for the corresponding canonical Hamiltonian system \( JX' = zHX \). In the case where \( \mu \) is an even measure from Steklov class on \( \mathbb{R} \), we show that the Hamiltonian \( H \) normalized by \( \det H = 1 \) belongs to the classical Muckenhoupt class \( A_2 \). Applications of this result to triangular factorizations of Wiener-Hopf operators and Krein orthogonal entire functions will be also discussed.

Talk time: 2016-07-18 15:30—2016-07-18 15:50
Talk location: Cupples I Room 115

Session: Operator theory, singular integral equations, and PDEs. Organized by R. Duduchava, E. Shargorodsky, and J. Lang