

Spectral problems for generalized Jacobi matrices

Vladimir Derkach

This is the joint work with Maxim Derevyagin (Donetsk National University, Ukraine).

Generalized Jacobi matrices associated with indefinite moment problems were introduced by M.G. Kreĭn and H. Langer in 1981. In the present talk we give another definition of generalized Jacobi matrix by reducing the number of free parameters. Every proper real rational function is proved to be the m -function of a unique finite generalized Jacobi matrix. Moreover, every generalized Nevanlinna function $m(\cdot)$ which is a solution of a determinate indefinite moment problem turns out to be the m -function of a unique infinite generalized Jacobi matrix. The method we use is based on the step-by-step Schur process of solving the indefinite moment problem.