The Schur Transformation for Nevanlinna Functions: Operator Representations, Resolvent Matrices, and Orthogonal Polynomials

A. Dijksma

joint work with D. Alpay and H. Langer

We consider a fractional linear transformation for a Nevanlinna function n with a suitable asymptotic expansion at ∞, that is an analogue of the Schur transformation for contractive analytic functions in the unit disc. Applying the transformation p times we find a Nevanlinna function n_p which is a fractional linear transformation of the given function n. We discuss the effect of this transformation to the realizations of n and n_p, by which we mean their representations through resolvents of self-adjoint operators in Hilbert space.