Singularities of Generalized Strings

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joint work with M. Kaltenbäck and H. Woracek

A function $q(z)$ belongs to the class N_κ^+ if $q(z) \in N_\kappa$ and $zq(z) \in N$. Each $q(z) \in N_\kappa^+$ is the Titchmarsh - Weyl coefficient of a generalized string, which may have negative jumps or singularities in its mass function, or dipoles. Relations between semibounded and symmetric Pontryagin spaces of entire functions lead to structure results for the spaces which are connected with the critical points of the generalized string, and which can be expressed in terms of the mass and the dipole function. The tool are transformations between maximal chains of matrix functions with $q(z)$, $zq(z)$, and $zq(z^2)$ as Weyl coefficients.