An estimate for the number of solutions of an homogeneous generalized Riemann boundary value problem with shift and conjugation

R. Marreiros

In the real space $\widetilde{L}_2(\mathbb{R})$, we consider the generalized Riemann boundary value problem with the condition on the real line $\varphi_+ = a\varphi_- + a_0\overline{\varphi_-} + a_1\overline{\varphi_-(\alpha)} + a_2\overline{\varphi_-(\alpha_2)} + \cdots + a_m\overline{\varphi_-(\alpha_m)}$, where $\alpha(t) = t + \mu$, $\mu \in \mathbb{R}$, is the shift on the real line, $\alpha_k(t) = \alpha(\alpha_{k-1}(t))$, $k \leq m$, $k, m \in \mathbb{N}$, and $a, a_0, a_1, \ldots, a_m$ are continuous functions on $\overset{\circ}{\mathbb{R}} = \mathbb{R} \cup \{\infty\}$, the one point compactification of $\mathbb{R}$. Under certain conditions on the coefficients, an estimate for the number of linear independent solutions of this problem is obtained.

This is a joint work with V. Kravchenko and J. Rodriguez.