

Invertibility theory for some classes of Toeplitz-plus-Hankel operators

Torsten Ehrhardt
POSTECH
ehrhardt@postech.kr

I will discuss invertibility for Toeplitz-plus-Hankel operators $T(a) + H(b)$ acting on the Hardy space $H^p(\mathbf{T})$, $1 < p < \infty$, for piecewise continuous (scalar) functions $a, b \in L^\infty(\mathbf{T})$. Fredholm theory for piecewise continuous a, b has been known for quite some time. On the other hand, for reasons to be explained, invertibility theory is in general as intractable as Wiener-Hopf factorization for 2×2 -matrix valued functions.

In one special case, where a and b are related to each other by some condition, nonetheless an invertibility theory can be established, which leads to explicit invertibility conditions in the case of $a, b \in PC$. The approach is based on a scalar factorization.

The talk is based on joint work with E.L. Basor and generalizes previously obtained results.