

# Fredholm properties of Toeplitz operators and meromorphic corona problems

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A meromorphic analogue to the corona problem is formulated and studied and its solutions are characterized as having a left inverse in a space of meromorphic functions. It is used to study the Fredholm properties of Toeplitz operators with  $2 \times 2$  symbol  $G$ , assuming that an associated Riemann-Hilbert problem admits a left invertible meromorphic solution. These results are applied to obtain Fredholmness and invertibility conditions for a class of Toeplitz operators, as well as partial index estimates for the corresponding matrix symbols.

The talk is based on a joint work with C. Diogo and L. Rodman.