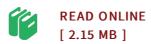# Constructive Methods of Wiener-Hopf Factorization

By Gohberg, Israel C. / Kaashoek, Marinus A.

Book Condition: New. Publisher/Verlag: Springer, Basel | The main part of this paper concerns Toeplitz operators of which the symbol W is an m x m matrix function defined on a disconnected curve r. The curve r is assumed to be the union of s + 1 nonintersecting simple smooth closed contours rOo r -. . . - rs which form the positively l oriented boundary of a finitely connected bounded domain in t. Our main requirement on the symbol W is that on each contour rj the function W is the restriction of a rational matrix function Wj which does not have poles and zeros on rj and at infinity. Using the realization theorem from system theory (see. e. g . - [1]. Chapter 2) the rational matrix function Wj (which differs from contour to contour) may be written in the form 1 (0. 1) W . (A) = I + C. (A - A. f B. A E r J J J J J J where Aj is a square matrix of size nj x n- say. B and C are j j j matrices of sizes n. x m and m x n . - respectively. and the...

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