A State Space Approach To Canonical Factorization With Applications

The present book deals with canonical factorization of matrix and operator functions that appear in state space form or that can be transformed into such a form. A unified geometric approach is used. The main results are all expressed explicitly in terms of matrices or operators, which are parameters of the state space representation. The applications concern different classes of convolution equations: the transport equation, singular integral equations, Wiener-Hopf equations with symbols analytic in a strip, and equations involving factorization of non-proper rational matrix functions. The analysis of canonical factorization for functions with symmetries, including spectral and J-spectral factorizations, related Ricatti equations, and elements of H-infinity control theory are also main topics. This book is the second book written by the four authors in which the state space factorization method is systematically used and developed further. In their first book, released in 2007, the emphasis is on non-canonical factorizations and degree one factorizations, in particular. The present book concentrates on canonical factorization and its applications. Together both books present a rich and far reaching update of the 1979 monograph, the first book in the OTAA series, written by the first three authors. EAN/ISBN : 9783764387532 Publisher(s): Springer, Berlin, Birkhuser Format: ePub/PDF Author(s): Bart, Harm - Gohberg, Israel - Kaashoek, M. A. - Ran, Andr C.M.

DOWNLOAD HERE