

# Canonical factorization of rational matrix functions on the unit circle revisited

M.A. Kaashoek

Canonical factorization of a rational  $m \times m$  matrix function on the unit circle will be described explicitly in terms of a stabilizing solution of a discrete algebraic Riccati equation using a special state space representation of the given function. The corresponding difference equation and its relation with the finite section method will also be discussed. The talk is based on joint work with A.E. Frazho and A.C.M. Ran.