Jens Saak

"On the Implementation of an Inexact Low Rank Kleinman-Newton Iteration for large and Sparse Riccati Equations"

Abstract:
In 2007 Feitzinger, Hylla and Sachs presented an inexact Newton interpretation of the Kleinman Newton Iteration for solving continuous time algebraic Riccati equations. At that time their result appeared to be of rather theoretic nature, since it provides a decision criterion for the required accuracy of the inner iteration in terms of an operator inequality. This criterion showed to be numerically inaccessible. Here we show an approach, that aims at forcing quadratic convergence of the outer iteration to ensure the inequality without touching it.
This is joint work with Timo Hylla.