Title: Numerical Solution of Double Saddle-Point Systems

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Abstract: Double saddle-point systems are drawing increasing attention in the past few years, due to the importance of multiphysics and other relevant applications and the challenge in developing efficient iterative numerical solvers. In this talk we describe some of the numerical properties of the matrices arising from these problems. We derive eigenvalue bounds and analyze the spectrum of preconditioned matrices, and it is shown that if Schur complements are effectively approximated, the eigenvalue structure gives rise to rapid convergence of Krylov subspace solvers. A few numerical experiments illustrate our findings.