

A FE based Multigrid scheme for elliptic Nash-equilibrium optimal control problems

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A finite-element based multigrid scheme for elliptic Nash-equilibrium multiobjective optimal control problems with control constraints will be presented. The multigrid computational framework implements a nonlinear multigrid strategy and collective smoothing for solving the multiobjective optimality system discretized with finite elements. Error estimates for the optimal solution and two-grid local Fourier analysis of the multigrid scheme are also discussed. Results of numerical experiments are presented to demonstrate the effectiveness of the proposed framework.