

Monolithic Algebraic Multigrid Methods for a Space–time Finite Element Discretization of Parabolic Optimal Control Problems

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In this talk, we will present some numerical studies on monolithic algebraic multigrid methods for solving the linear system of algebraic equations arising from a space–time finite element discretization of parabolic optimal control problems. The finite element discretization is based on the recent results [O. Steinbach: Space–time finite element methods for parabolic problems, *Comput. Methods Appl. Math.*, 15:551–566, 2015]. We will mainly focus on robustness of the monolithic algebraic multigrid methods for solving the discretized optimal control problems all at once, that are based on the algebraic multigrid methods we have recently developed for the space–time finite element discretization of parabolic problems.

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