

Algebraic multigrid methods for a space–time finite element discretization of parabolic and coupled problems

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In this talk, we will present some numerical studies on algebraic multigrid methods for solving the linear system of algebraic equations arising from a space–time finite element discretization of parabolic and coupled 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 algebraic multigrid methods for solving the discretized model problems, with respect to the mesh discretization parameter, material constants, local space–time adaptivity, and some certain regularization parameter.