

Talk announcement

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Parallel multiple goal-oriented adaptive space-time finite element methods for quasi-linear parabolic evolution equations

We present two extensions of our recently proposed goal-oriented adaptive space-time finite element method for the regularized parabolic p-Laplace problem on possibly unstructured space-time meshes. We first consider the case of multiple goal functionals, where we discuss the combination of multiple goal functionals into a single functional. Second, we evaluate the parallel performance of the adaptive method. Since we use an all-at-once discretization approach, the parallelization of the solver for the non-linear systems of equations is straightforward. We discuss the localization via the partition-of-unity method for distributed memory parallelization. We present numerical experiments that demonstrate the performance of the parallel goal-oriented space-time finite element solver for different kinds of functionals.