

Evolution of a Coarse Grid Selection Algorithm

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Algebraic multigrid (AMG) is an iterative linear solver that constructs a hierarchy of linear systems to solve the original problem. This hierarchy is built by a group of algorithms collectively called the AMG setup phase. One part of the setup phase, coarse grid selection, chooses the degrees of freedom to form the problem on the next level. Our recent work includes modifying the design and data structures of a parallel coarse grid selection algorithm to improve its performance. This poster illustrates the algorithm's evolution over time and discusses its design, performance, and the motivation for the modifications.