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Adaptive algebraic multigrid on SIMD architectures

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We present details of our implementation of the Wuppertal adaptive algebraic multigrid code on SIMD architectures, with particular emphasis on the Intel Xeon Phi processor (KNC) used in QPACE 2. As a smoother, the algorithm uses a domain-decomposition-based solver code previously developed for the KNC in Regensburg. We optimized the remaining parts of the multigrid code and conclude that it is a very good target for SIMD architectures. Some of the remaining bottlenecks can be eliminated by a multiple-right-hand-sides setup, which is discussed in the contribution of Daniel Richtmann.

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