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Experimental analysis of an FAC-based coarsening scheme for open boundary problems

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Poisson's equation on unbound domains was solved with a hierarchical grid coarsening approach based on Stephen F. McCormick's Fast Adaptive Composite grid method. We were especially interested in the efficient interface treatment with regular stencils this method enables. It was experimentally shown that the convergence properties are very similar to those of a fully refined grid scheme. The error behavior of a second-order scheme was empirically analyzed for an exemplary setup from molecular dynamics.