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Semicoarsening Multigrid with Prerelaxed Target Vectors

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Robust semicoarsening multigrid algorithms typically construct an interpolation operator using the matrix coefficients and an assumption that the error to be interpolated is essentially constant in the noncoarsened direction. This means that the interpolation operator is constructed to exactly interpolate the vector of all ones. In this talk we investigate the performance of the method when this target vector of all ones is replaced by a vector obtained from relaxation on the homogeneous problem as in bootstrap multigrid methods.