

Tensor Approach to Multilevel Structured Matrices

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We present some nontrivial purely algebraic tensor rank estimates for the inverse matrices to certain low-tensor-rank matrices, including some classes of multilevel structured matrices, and as well a new matrix approximation tool useful for multilevel Toeplitz matrices and delivering some superlinear preconditioners which are not available when using other established methods.

This is a joint work with I. Oseledets and N. Zamarashkin.