The update of sequences of some incomplete decompositions matrices for preconditioning

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Simulation with models based on partial differential equations require very often the solution of (sequences of) large and sparse algebraic linear systems. In multidimensional domains, *preconditioned* Krylov iterative solvers are often appropriate for these duties. Therefore, the search for efficient preconditioners for Krylov subspace methods is a crucial theme.

Recent developments, especially in computing hardware, have renewed the interest in *approximate inverse preconditioners* in factorized form, because their application during the solution process can be more efficient.

We present some ideas for updating approximate inverse preconditioners in factorized form. Computational costs, reorderings and implementation issues are considered.