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How a step toward wider class of matrices could help improve convergence area of relaxation methods

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Investigations are related to several different relaxation methods for solving systems of linear equations, but the main idea is always the same: knowing that system matrix is strictly diagonally dominant (SDD), we can consider it as an S-SDD (see Lj. Cvetkovic, V. Kostic and R. S. Varga, *A new Geršorin-type eigenvalue inclusion area*, ETNA 18, 2004) matrix for every nonempty proper subset S of the set of indices, and from this fact we can derive, in some sense, an optimal convergence area for relaxation parameter(s). This convergence area is usually significantly wider than the corresponding one, obtained from the knowledge of SDD property, only. Instead of S-SDD class, some more subclasses of H-matrices can be used for the same purposes.