

Block diagonal dominance of matrices revisited

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We generalize well known bounds on the inverses of diagonally dominant matrices from scalar to block tridiagonal matrices. Our derivations are based on a generalization of the classical condition of block diagonal dominance of matrices given by Feingold and Varga, Fiedler and Pták, as well as Ostrowski in the 1960s. Based on this generalization we also derive a variant of the Gershgorin Circle Theorem for general block matrices which can provide tighter spectral inclusion regions than those obtained by Feingold and Varga. The talk is based on joint work with Carlos Echeverría and Reinhard Nabben (both TU Berlin).

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