ON \textit{K}-POTENT MATRICES$^*$

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\textbf{Abstract.} The paper provides extensive and systematic investigations of $k$-potent complex matrices, with a particular attention paid to tripotent matrices. Several new properties of $k$-potent matrices are identified. Furthermore, some results known in the literature are reestablished with simpler proofs than in the original sources and often in a generalized form.

\textbf{Key words.} Projector, Idempotent matrix, Tripotent matrix, Powers of matrices, Sylvester’s inequality, Frobenius’ inequality, Rank, Column space, Null space, EP matrix, Group matrix, Partial isometry.

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