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An Investigation of Coefficient Sign Arbitrary Patterns

A square zero-nonzero pattern, \mathcal{A} , is a square matrix with entries in $\{0, *\}$. Such a pattern is said to be coefficient support arbitrary if for every $S \subseteq \{1, 2, \dots, n\}$ there is a matrix A with zero-nonzero pattern \mathcal{A} such that $\alpha_i \neq 0$ if and only if $i \in S$, where $x^n + \alpha_1 x^{n-1} + \alpha_2 x^{n-2} + \dots + \alpha_{n-1} x + \alpha_n$ is the characteristic polynomial of A . In this talk, we naturally extend this definition to coefficient sign arbitrary patterns and explore some initial results.