Alternating Sign Matrices: History, Patterns, Completions, and Spectral Radius

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Abstract: An alternating sign matrix (ASM) is an $n \times n$ $(0, +1, -1)$-matrix such that, ignoring 0s, in each row and column, the $+1$s and -1s alternate beginning and ending with a $+1$. We shall discuss their origins, properties, completions when only the -1s have been prescribed, and briefly the largest spectral radius possible.