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Graphs and matrices with integral spectrum in some families

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We present several recent results about the distribution of graphs and matrices in some families which have integral eigenvalues. The families of graph include circular graph, regular graphs and the arbitrary graphs. The families of matrices include 0,1-matrices of growing dimension and also matrices (a_{ij}) with entries in given intervals $a_{ij} \in [k_{ij}, k_{ij} + h_{ij} - 1]$, $1 \leq i, j \leq n$ for a fixed n and sufficiently large h_{ij} .

We also outline some motivation for questions of this kind and outline some open questions.