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*Minimum number of distinct eigenvalues of a graph*

Suppose  $G$  is a graph with vertex set  $V = \{1, 2, \dots, n\}$ . Associate to  $G$  the collection of real symmetric matrices defined by

$$S(G) = \{A : A = A^T, \text{ for } i \neq j, a_{ij} \neq 0 \Leftrightarrow \{i, j\} \text{ is an edge in } G\}.$$

If we let  $q(A)$  denote the number of distinct eigenvalues of  $A$ , then for a graph  $G$  we define

$$q(G) = \min\{q(A) : A \in S(G)\}.$$

In this talk I will present some preliminary work that was done with the Discrete Math Research Group at the University of Regina on  $q(G)$ .