

# Hermitian spectra of mixed graphs

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A *mixed graph*  $D_G$  is obtained from a simple graph  $G = (V, E)$ , the *underlying graph* of  $D_G$ , by orienting a subset of  $E(G)$ . The *Hermitian adjacency matrix* of a mixed graph  $D = (V, E_0 \cup E_1)$  of order  $n$  is defined to be a matrix  $H(D) = (h_{uv})_{n \times n}$ , where  $h_{uv} = 1$  if  $uv$  is an undirected edge,  $h_{uv} = i$  if there is an arc from  $u$  to  $v$ ,  $h_{uv} = -i$  if there is an arc from  $v$  to  $u$ ,  $h_{uv} = 0$  otherwise. This matrix was introduced by Liu and Li in the study of graph energy and independently by Guo and Mohar. In this talk, we will introduce some new results on this topic.