On the spectra of Cayley graphs

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Let G be a group with identity 1_G, and let A, B be two disjoint subsets such that $1_G \notin A \cup B$ and such that $A = A^{-1}$. The Cayley mixed graph $\mathrm{Cay}(G; A, B)$ consists of the set of vertices given by the elements of G, the edges join $g \in G$ and gx for every $x \in A$, and there is an arc from vertex $g \in G$ towards gx for every $x \in B$. Hence $\mathrm{Cay}(G; A, B)$ is totally regular of undirected degree $|A|$ and directed degree $|B|$. In this talk, we present the spectra of Cayley graph $\mathrm{Cay}(G; A, B)$ on some group G and discuss cospectral nonequivalent such Cayley graphs.

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