

ON THE SPECTRA OF JOHNSON GRAPHS*

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Abstract. The spectrum of a Johnson graph is known to be given by the Eberlein polynomial. In this paper, a straightforward representation-theoretic derivation of this fact is presented. Also discussed are some consequences of this formula, such as the fact that infinitely many of them are Ramanujan.

Key words. Young subgroups, Spherical functions, Finite symmetric spaces, Ramanujan graphs, Symmetric groups, Representations, Characters, Spectral graph theory, Gelfand pair.

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