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V. Nikiforov* (vnikifrv@memphis.edu), University of Memphis, 373 Dunn Hall, Memphis, TN 38152. *Extrema of graph eigenvalues.*

In 1993 Hong asked what are the best bounds on the k -th largest eigenvalue of a graph G of order n . This challenging question has never been tackled for $2 < k < n$. In this talk some tight bounds are outlined for all $k > 2$, and even tighter bounds are outlined for the k -th largest singular value of G . Some of these bounds are based on Taylor's strongly regular graphs, and others on a method of Kharaghani for constructing Hadamard matrices. A few open problems will be stated. (Received January 19, 2016)