1126-05-134   **Sebastian M. Cioabă**, Department of Mathematical Sciences, University of Delaware, Newark, DE 19716, and **Xiaofeng Gu***, Department of Mathematics, University of West Georgia, Carrollton, GA 30118. *Spectral conditions for toughness of regular graphs.*

The toughness $t(G)$ of a connected graph G is defined as $t(G) = \min\{\frac{|S|}{c(G-S)}\}$, where the minimum is taken over all proper subset $S \subset V(G)$ such that $c(G-S) > 1$. This parameter was introduced by Chvátal in 1973 and is closely related to many graph properties, including Hamiltonicity, pancyclicity and spanning trees. In this talk, we will discuss the relationship between toughness and eigenvalues of a regular graph, as well as some related problems. (Received January 09, 2017)