

1106-VN-2460 **Suil O*** (sui1o@gsu.edu). *Edge-connectivity in regular multigraphs from eigenvalues.*

Let G be a d -regular multigraph, and let $\lambda_2(G)$ be the second largest eigenvalue of G . In this talk, we prove that if $\lambda_2(G) < \frac{d-1+\sqrt{9d^2-10d+17}}{4}$, then G is 2-edge-connected. Furthermore, for $t \geq 2$ we show that G is $(t+1)$ -edge-connected when $\lambda_2(G) < d-t$, and in fact when $\lambda_2(G) < d-t+1$ if t is odd. (Received September 16, 2014)