1060-05-47   **Michael R. Yatauro*** (`myatauro@stevens.edu`), Stevens Institute of Technology, Castle Point on Hudson, Hoboken, NJ 07030. *Degree Improvements to Bounds on the Binding Number and Toughness of a Graph.*

It can sometimes be shown that all realizations of a degree sequence must have a certain property. A well-known theorem of V. Chvátal provides a "best monotone" degree condition for a graph to be hamiltonian. Similarly, it is possible to find a bound on a graph parameter so that in all realizations of a degree sequence the parameter will satisfy the given bound. Such a "best monotone" degree condition for graph connectivity was given by F. Boesch and J.A. Bondy. We will discuss what it means for a set of degree conditions to be best monotone. We then present such conditions for the binding number and the toughness of a graph. We also look at recent bounds on toughness and binding number. We then show how some of these bounds can be improved if we know that the degree sequence of a graph satisfies the given best monotone conditions. (Received March 09, 2010)