1126-05-113 **Mark Ellingham*** (mark.ellingham@vanderbilt.edu), **Songling Shan**, **Dong Ye** and **Xiaoya Zha**. *Toughness for bounded treewidth.* Preliminary report.

Toughness is an important graph theory parameter that seems to play an essential role in traversability properties such as the existence of a hamilton cycle. However, in general it is difficult (NP-hard) to compute. We use dynamic programming to show that toughness can be computed in polynomial time for graphs of bounded treewidth. Our algorithm is not fixed-parameter tractable, since the degree of the polynomial depends on the treewidth. However, it does seem to be practical for treewidth 2, or in other words for series-parallel graphs. (Received January 08, 2017)