1077-05-364 **Dara Moazzami*** (`dmoazzami@ut.ac.ir`), University of Tehran, School of Engineering, Faculty of Engineering Science, 14395-195 Tehran, Iran, **Morteza Dadvand** (`dadvand@ut.ac.ir`), University of Tehran, School of Engineering, Department of Algorithms and Computation, 14395-195 Tehran, Iran, and **Ali Moeini** (`moeini@ut.ac.ir`), University of Tehran, School of Engineering, Faculty of Engineering science, 14395-195 Tehran, Iran. *Complexity of Tenacity Parameter in Networks.*

In this paper we are settling a long-standing open problem. We prove that it is NP-hard to recognize T-tenacious graphs for any fixed positive rational number T.

The concept of tenacity of a graph G was introduced by Cozzens, Moazzami and Stueckel in 1992, as a useful measure of the "vulnerability" of G. The tenacity of a graph G, T(G), is defined by $T(G) = min\{\frac{|S|+\tau(G-S)}{\omega(G-S)}\}$, where the minimum is taken over all vertex cutsets S of G. We define $\tau(G-S)$ to be the number of vertices in the largest component of the graph G - S, and $\omega(G-S)$ be the number of components of G - S. A connected graph G is called T-tenacious if $\mid S \mid +\tau(G-S) \geq T\omega(G-S)$ holds for any subset S of vertices of G with $\omega(G-S) > 1$. If G is not complete, then there is a largest T such that G is T-tenacious ; this T is the tenacity of G. On the other hand, a complete graph contains no vertex cutset and so it is T-tenacious for every T.

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