1033-05-64 **Xiangqian Zhou*** (zhx@marshall.edu), Department of Mathematics, Marshall University, Huntington, WV 25755, **Talmage J Reid**, 38677, and **Haidong Wu**. *On Minimally k-Connected Matroids.*

A graph G is *minimally k-connected* if G is k-connected and, for each edge $e \in E(G)$, $G\backslash e$ is not k-connected. Halin showed that a minimally k-connected graph has a vertex of degree k. The existence of vertices of degree k in minimally k-connected graphs has proven to be very useful in studying the structure of k-connected graphs.

A matroid M is *minimally k-connected* if M is k-connected, and for every $e \in E(M)$, $M\backslash e$ is not k-connected. It is conjectured that every minimally k-connected matroid with at least $2(k-1)$ elements has a cocircuit of size k. For $k = 2$ and 3, Murty (1974) and Wong (1978) resolved this conjecture affirmatively. We prove that a minimally 4-connected matroid has a cocircuit of size 4 unless it is isomorphic to a special matroid with 9 elements. We also construct a counterexample to the conjecture for each $k \geq 5$.

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