1126-05-185 **Martin Rolek*** (mrolek@knights.ucf.edu) and **Zi-Xia Song**. *Double-critical graph conjecture for claw-free graphs.*

A connected graph G with chromatic number t is *double-critical* if $G\backslash\{x, y\}$ is $(t-2)$-colorable for each edge $xy \in E(G)$. The complete graphs are the only known examples of double-critical graphs. A long-standing conjecture of Erdős and Lovász from 1966, which is referred to as the *Double-Critical Graph Conjecture*, states that there are no other double-critical graphs. That is, if a graph G with chromatic number t is double-critical, then G is the complete graph on t vertices. This has been verified for $t \leq 5$, but remains open for $t \geq 6$. In this paper, we first prove that if G is a non-complete double-critical graph with chromatic number $t \geq 6$, then no vertex of degree $t+1$ is adjacent to a vertex of degree $t+1$, $t+2$ or $t+3$ in G. We then use this result to show that the Double-Critical Graph Conjecture is true for double-critical graphs G with chromatic number $t \leq 8$ if G is claw-free. (Received January 12, 2017)