Suil O* (suilo2@math.uiuc.edu), 409 W. Green Street, Urbana, IL 61801, and Douglas B West and Hehui Wu. Longest Cycles in $k$-connected Graphs with Given Independence Number.

The Chvátal-Erdős Theorem states that every graph whose connectivity is at least its independence number has a spanning cycle. In 1976, Fouquet and Jolivet conjectured an extension: If $G$ is an $n$-vertex $k$-connected graph with independence number $a$, and $a \geq k$, then $G$ has a cycle with length at least $\frac{k(n+a-k)}{a}$. We prove this conjecture. (Received September 09, 2010)