1065-05-73 **Guantao Chen*** (gchen@gsu.edu), Department of Mathematics and Statistics, Georgia State University, Atlanta, GA 30303, **Zhiquan Hu**, Faculty of Mathematics and Statistics, Central China Normal University, Wuhan, Hubei , Peoples Rep of China, and **Yaping Wu**, Faculty of Mathematics and Statistics, Central China Normal University, Wuhan, Hubei , Peoples Rep of China. *A lower bound of circumferences involving connectivities and independence numbers of subgraphs.* Preliminary report.

Let G be a k-connected graph of order n and let α and $c(G)$ be *the independence number* of G and *the circumference* of G, respectively. If $\alpha \leq k$, Chvátal and Erdős showed that G is hamiltonian. For $\alpha \geq k \geq 2$, Fouquet and Jolivet in 1978 made the conjecture that $c(G) \geq \frac{k(n+\alpha-k)}{\alpha}$, which was recently confirmed by Suil O, D. B. West and H. Wu. Under the same condition, we obtained the following two results:

1. $c(G) \geq \min\left\{n, \max\left\{\frac{k(n+\alpha-k)}{\alpha}, k\left\lfloor\frac{n+2\alpha-2k}{\alpha}\right\rfloor\right\}\right\}$;

2. For every nonempty induced subgraph H, there is a cycle C in G such that $|V(C)\cap V(H)| \geq \min\left\{|H|, k\left\lfloor\frac{|H|+\alpha(H)-k}{\alpha(H)}\right\rfloor\right\}$.

Set $f(G) := \min\left\{|G|, \max\left\{\frac{k(|G|+\alpha(G)-k)}{\alpha(G)}, k\left\lfloor\frac{|G|+2\alpha(G)-2k}{\alpha(G)}\right\rfloor\right\}\right\}$. Notice that $f(G)$ is not monotonic according to the inclusion order of subgraphs. We further improve the first result by showing that

$$c(G) \geq \max\{f(H) : H \text{ is any nonempty induced subgraph of } G\}.$$

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