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Y Zhao* (yzhao@mail.ucf.edu), Yue Zhao, Department of Mathematics, University of Central Florida, Orlando, FL 32816. *Hamiltonian Cycles in Critical Graphs with Large Maximum Degree.*

It is shown that an overfull Δ -critical graph with n vertices that satisfies $\Delta \geq \frac{n}{2}$ is Hamiltonian. If the Overfull Subgraph Conjecture was proved to be true, then the above result could be said that any Δ -critical graph with n vertices that satisfies $\Delta \geq \frac{n}{2}$ is Hamiltonian. Since the Overfull Subgraph Conjecture is still open, the natural question is how to directly prove a Δ -critical graph with n vertices that satisfies $\Delta \geq \frac{n}{2}$ is Hamiltonian. In 2012, it was shown that a Δ -critical graph with n vertices that satisfies $\Delta \geq \frac{6n}{7}$ is Hamiltonian. In this talk, we show that if G is a Δ -critical graph with n vertices satisfying $\Delta \geq \frac{4n}{5}$, then G is Hamiltonian. (Received January 02, 2016)