

Meeting: 1003, Atlanta, Georgia, SS 24A, AMS Special Session on Design Theory and Graph Theory, I

1003-05-739 **Guantao Chen*** (gchen@gsu.edu), Department of Mathematics and Statistics, Georgia State University, Atlanta, GA 30303, **Katshiro Ota**, Department of Mathematics, Keio University, Yokohama, Japan, and **Akira Saito**, Department of Computer Science and, and System Analysis, Nihon University, Tokyo, Japan. *Hamiltonian Cycles with small even chords*. Preliminary report.

Let G be a graph. A hamiltonian cycle $C = v_1v_2 \cdots v_nv_1$ is called a square hamiltonian cycle if $v_iv_{i+2} \in E(G)$ for all $i = 1, 2, \dots, n$. If a graph has a square hamiltonian cycle then G is pancyclic and contains different all 2-factor. Sufficient degree conditions for square hamiltonian cycles have been intensively studied. A hamiltonian cycle $v_1v_2 \cdots v_nv_1$ is called an even square hamiltonian cycle if $v_iv_{i+3} \in E(G)$ for all $i = 1, 2, \dots, n$. We show that for any $\epsilon >$, there is an N such that if G is a graph of order $n > N$ such that $\delta(G) > (1/2 + \epsilon)n$, then G contains an even square hamiltonian cycle. (Received September 28, 2004)