1056-05-731 **Yanting Liang*** (lyt814@math.wvu.edu), Department of Mathematics, West Virginia University, Morgantown, WV 26506. *Supereulerian Graphs and Hamiltonian Line Graphs.*

Boesch, Suffel, and Tindell in [1977 JGT] proposed the problem to characterize supereulerian graphs, which are the graphs containing spanning Eulerian subgraphs. Pulleyblank in [1979 JGT] showed that determining if a graph is supereulerian is NP-complete. Catlin and Li in [1999 J. Adv. Math.] are the first pioneers who consider the problem of characterizing supereulerian graphs in the family $C_h(l,k)$. We prove that for any integer $k>0$, there exists an integer $N=N(k)$ such that for any $n \geq N$, any graph $G \in C_2(6,k)$ on n vertices is supereulerian if and only if G cannot be contracted to a member in a well characterized family of graphs. Supereulerian graphs have been also studied and applied to investigate hamiltonian line graphs. A graph G is s-hamiltonian-connected if the deletion of any vertex subset with at most s vertices results in a hamiltonian-connected graph. We proved that the line graph of a $(t+4)$-edge-connected graph is $(t+2)$-hamiltonian-connected if and only if it is $(t+5)$-connected, and for $s \geq 2$ every $(s+5)$-connected line graph is s-hamiltonian-connected in [2008 DM]. (Received September 16, 2009)