H. Kierstead (kierstead@asu.edu), School of Math. Sciences and Statistic, Arizona State University, Tempe, AZ 85287, A. Kostochka* (kostochk@math.uiuc.edu), Dept. of Mathematics, 1409 W. Green St., Urbana, IL 61801, and E. Yeager (yeager2@illinois.edu), Dept. of Mathematics, 1409 W. Green St., Urbana, IL 61801. A refinement of the Corrádi-Hajnal Theorem. Preliminary report.

Corrádi and Hajnal proved in 1963 the conjecture by Erdős that if $n \geq 3k$, then every $n$-vertex graph $G$ with minimum degree at least $2k$ contains $k$ vertex-disjoint cycles. The restriction on the minimum degree is sharp.

We prove a Brooks-type result describing for $k \geq 3$ the extremal graphs for the theorem. Namely, we show that if $k \geq 3$ and $G$ is a graph with $n \geq 3k$ vertices and minimum degree at least $2k - 1$ that has no $k$ vertex-disjoint cycles, then either $G$ has an independent set of size $n - 2k + 1$ or $n = 3k$ and the complement of $G$ is the disjoint union of a copy of $K_k$ and a copy of $K_{k,k}$.

We also consider extremal graphs for the Ore-type version of the Corrádi-Hajnal Theorem. (Received September 19, 2012)