1164-05-157 **Theodore Molla*** (molla@usf.edu) and **Michael Santana**. *Disjoint cycles in graphs with restricted independence number.* Preliminary report.

In 1963, Corrádi and Hajnal proved that every graph with at least $3k$ vertices and minimum degree at least $2k$ contains a collection of k disjoint cycles. Recently, Kierstead, Kostochka, and Yeager refined this result by describing all graphs with at least $3k$ vertices and minimum degree at least $2k-1$ that do not have k disjoint cycles. One corollary of this result is that when $k \geq 3$, every graph with $n \geq 3k$ vertices, minimum degree at least $2k-1$, and independence number at most $n-2k-1$ has k disjoint cycles.

Continuing along the lines of this corollary, we will explore how restricting the independence number affects the minimum degree threshold for k disjoint cycles by describing the following result. For a fixed constant C and every sufficiently small $c > 0$ there exists k_0 such that for every $k \geq k_0$ and sufficiently large n the following holds. Every graph on n vertices with minimum degree at least $2k - ck$ and independence number at most $n - 2k - ck - C$ has k disjoint cycles and there exist graphs on n vertices with minimum degree $2k - ck$ and independence number at most $n - 2k - ck + O(\sqrt{kc\log(kc)})$ that do not contain a collection of k disjoint cycles. (Received January 19, 2021)