

1113-05-127

Michael S Jacobson* (michael.jacobson@ucdenver.edu), Campus Box 170, PO. Box 173364, Denver, CO 80217-3364. *Minimum degree and even cycle lengths.*

Dirac showed that if G is a 2-connected graph of order n with minimum degree $\delta \geq 3$, then G contains a cycle of length at least $\min\{n, 2\delta\}$. We conjecture that there are $\delta - 1$ even cycles of different lengths and when G is non-bipartite there are $\delta - 1$ odd cycles of different lengths. We prove this conjecture when $\delta = 3$. Related results concerning the number of different even cycle lengths supporting the conjecture are also included. In particular, we show that there are always at least $(\delta - 1)/2$ even cycles of different lengths. Further, we prove the conjecture for even cycles when $\delta \geq 3$.

This was joint work completed with Ralph Faudree, Ronald Gould and Colton Magnant. This work was one of the final projects on which we collaborated with Ralph Faudree. (Received August 17, 2015)