

1023-05-648

Joe Anderson* (jsanders@mvsu.edu), 14000 HWY 82 W, 5172, Itta Bena, MS 38941, and
Haidong Wu (hwu@olemiss.edu), University of Mississippi, Hume 305, University, MS 38677.

Elements belonging to 2-element cocircuits in connected matroids.

In this paper, we give a best-possible bound on the number of elements belonging to 2-element cocircuits in connected matroids. We prove the following result: Let M be a loopless connected matroid with at least six elements. Then M has at least $\frac{2|E(M)|+6-4|Del(M)|}{3}$ elements belonging to two element cocircuits. As a consequence for minimally 2-connected matroids, we obtain a result of Oxley, as well as a result of Reid and Wu. Our main result also gives an analog of a matroid result of Lemos. (Received September 20, 2006)