1087-05-36 **João P. Costalonga*** (joaocostalonga@yahoo.com.br), Av. Colombo, 5790 - Campus UEM, Depto de Matemática, bl.F67 sl.221, Maringá, Paraná 87020-900, Brazil. *Non-separating cocircuits and graphicness in matroids.* Preliminary report.

The concept of non-separating cocircuit in a binary matroid is the closer concept for matroids to the one of vertices in graphs. A cocircuit C^* in a connected matroid M is said to be *non-separating* if $M\backslash C^*$ is a connected matroid. For a 3-connected graph G, the unique non-separating cocircuits of $M(G)$ are the stars of the vertices of G.

Let M be a 3-connected binary matroid with more than four elements. Bixby and Cunningham proved that M is graphic if and only if, in M, each element belongs to at most two non-separating cocircuits. Lemos proved that M is graphic if and only if each elements of M avoids at most $r^*(M)-1$ non-separating cocircuits. In this work we study the set $Y(M)$ of the elements of M avoiding at least $r^*(M)$ non-separating cocircuits of M. We proved that if M is not graphic, $|E(M)-Y(M)| \leq 1$ when M is not regular or M has no $K'''_{3,3}$-minor. We have a conjecture that if M is not graphic, then $r^*_M(E(M)-Y(M)) \leq 2$. We proved that this conjecture is valid in general if and only if it holds on a determined finite class of matroids. The computational procedure to finish the proof of the conjecture is in course. (Received November 15, 2012)