1080-05-240 **Bert Gerards**, **Tony Huynh** and **Stefan H.M. van Zwam***
(svanzwam@math.princeton.edu). *Menger's Theorem for Matroids, doubled.* Preliminary report.

Tutte's Linking Theorem is a generalization of Menger's Theorem from graphs to matroids. It has proven to be of great value in the study of matroid connectivity.

Let S and T be disjoint subsets of the groundset of a matroid M. The *connectivity* between S and T, denoted $\kappa_M(S,T)$, is the minimum order of a separation (X,Y) with $S \subseteq X$ and $T \subseteq Y$. Tutte's Linking Theorem states that, for all elements e outside S and T, at least one of $M\backslash e$ and M/e has the same connectivity between S and T as M.

In this talk we have two pairs of subsets, (S_1,T_1) and (S_2,T_2), of the groundset of M. We show that, if M is sufficiently large and representable over a finite field, we can find an element e such that in one of $M\backslash e$ and M/e *both* connectivities are preserved.

We conjecture that the bound on the size of M does not depend on the field. (Received January 28, 2012)