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Jenny McNulty* (mcnulty@mso.umt.edu), Department of Mathematical Sciences, The University of Montana, Missoula, MT 59812, and **Gary Gordon** and **Nancy Neudauer**. *Fixing Number and Matroids*. Preliminary report.

A fixing set S of a matroid M is a subset of the ground set E of M so that the only automorphism of M that fixes S pointwise is the identity. The fixing number of M is the minimum size of a fixing set. The notion of a fixing set (also called determining set) arose in graph theory, as both fixing sets as well as determining sets; we extend this study to matroid theory.

The fixing number of a binary matroid is bounded by the rank of the matroid. This bound is tight in the Fano matroid, for example. This bound does not hold in non-binary matroids; for example $U_{r,n}$ for $n - 1 > r$ has fixing number $n - 1$. In this talk, we present results of bounds on the fixing number of transversal matroids in terms of sizes of clones sets and the rank. (Received January 26, 2010)