

1014-05-1164 **Rigoberto Florez*** (florezr@uscsumter.edu), University of South Carolina Sumter, 200 Miller Road., Sumter, SC 29150-2498. *A construction of a projective plane in harmonic matroids.*

A *matroid* is a generalization of the dependence and independence of a finite set of vectors. There are no linear relations, only dependent and independent sets. This structure is present in several different subjects of mathematics. For example in graphs, vectors, projective planes and transcendental extension of fields.

In this talk, we will define a new type of matroid called *harmonic matroid*. We discuss how to construct a projective plane of order prime in any harmonic matroid without using the axioms of projective geometry. (Received September 27, 2005)