

Meeting: 1005, Newark, Delaware, SS 5A, Special Session on Designs, Codes, and Geometries

1005-05-130 **David B Chandler** and **Peter K Sin*** (sin@math.ufl.edu), Dept. of Mathematics, 358 Little Hall, P.O. Box 118105, Gainesville, FL 32611-8105, and **Qing Xiang**. *The p -rank of the symplectic generalized quadrangles*. Preliminary report.

Given a four-dimensional vector space, with a nonsingular alternating bilinear form, over a finite field, we consider the incidence matrix for inclusion of one-dimensional subspaces in totally isotropic two-dimensional subspaces, regarded as a matrix over the same field. We give a formula for the rank of this matrix in terms of the field order. Previously, this rank was known only in the cases where the field order was even or prime. (Received February 07, 2005)