

1147-94-602

Shu Lin* (shulin@ucdavis.edu), 1 Shield Ave, Davis, CA 95616, and **Juane Li** (jueli@ucdavis.edu), 540 Alder Drive, Milpitas, CA 95035. *Partial Geometries on Finite Fields and Their Associated QC-LDPC Codes.*

In this talk, we present a class of partial geometries which are constructed based on cyclic subgroups of finite fields with prime orders. Using the point-line incidence matrix of a partial geometry in this class, quasi-cyclic low-density parity-check (QC-LDPC) codes of various lengths and rates can be constructed. Under certain constraints, a partial geometry based QC-LDPC code is composed of a copy of a cyclic code and its Hadamard equivalents. (Received January 27, 2019)