

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

1005-94-157 **Jon-Lark Kim*** (jlkim@math.unl.edu), Department of Mathematics, University of Nebraska at Lincoln, 203 Avery Hall, Lincoln, NE 68588-0130, and **Leo Storme** (ls@cage.ugent.be), Dept of Pure Math and Computer Algebra, Ghent University, Ghent, Belgium. *LDPC Codes from Geometries*. Preliminary report.

Low-density parity-check (LDPC) codes are one of hottest topics in coding theory today. Finite geometries as well as some designs produce many interesting LDPC codes. The first serious construction of LDPC codes using finite geometries was given by Kou, Lin and Fosson (2001). Other geometric/combinatorial constructions use Kirkman triple systems, generalized quadrangles (or generalized polygons), partial geometries, etc. We describe briefly these constructions. As an extension of EG(2,q)-construction by Kou, et al., we present some results on LDPC codes based on k-nets. (Received February 07, 2005)