

1106-05-2242

**Kathryn Haymaker\***, kathryn.haymaker@villanova.edu. *Constructions of codes for the grain-error model*. Preliminary report.

In 2011 Mazumdar et al. proposed a combinatorial model of errors in high-density magnetic storage media. In this model, grains of varying sizes can be set to one of two polarities. When adjacent bit positions are contained in one grain, one of the bits can be forced into the wrong polarity by the grain, causing grain-errors. Recently, several authors have presented constructions of codes correcting single grain-errors, and bounds on the size of  $t$ -grain-correcting codes. In this talk we will introduce the notion of a grain-detecting set and present constructions of grain-correcting-codes for grains of different sizes. (Received September 16, 2014)