

Meeting: 1003, Atlanta, Georgia, SIAMMINI 3, SIAM Minisymposium on Error-Correcting Codes

1003-05-214 **Tuvi Etzion*** (etzion@cs.technion.ac.il), Computer Science Department, Technion, Haifa 32000, Israel. *Error-Correction for Arbitrary Two-Dimensional Errors.*

Recent developments of optical, magnetic, and holographic recording have increased the need for error-correction of cluster errors in two and three dimensional arrays. Most research in the past has considered specific types of errors, such as rectangular clusters, criss-cross clusters, and rank-restricted clusters. Only recently arbitrary two-dimensional errors were considered. We will discuss two methods for correction of two-dimensional cluster-errors. The first one is using direct algebraic and combinatorial methods and the second is using interleaving. For interleaving schemes to correct such errors a new distance measure is defined. Many new problems arise, to some of them we will give the answer, and some remain open. (Received August 30, 2004)