1020-94-171 **Alexander Barg*** (abarg@umd.edu), University of Maryland, and **Punarbasu Purkayastha**, University of Maryland. *Bounds on ordered codes and orthogonal arrays.*

This talk deals with three types of closely related objects, TMS nets, ordered orthogonal arrays and ordered codes. TMS nets which approximate uniformly distributed point sets in a cube, were defined by Sobol (1968) in the binary case and generalized by Niederreiter (1986) to the case of an arbitrary radix q. It was realized by Lawrence and Mullen/Schmid (1996) that TMS nets can be equivalently described in the language of hypercubic designs, also termed ordered orthogonal arrays. A year later and independently of the previous work, Rosenbloom and Tsfasman defined ordered codes. Shortly thereafter it became clear that these codes are the Delsarte duals of ordered orthogonal arrays.

Bounds on ordered codes were derived by Rosenbloom and Tsfasman. Martin and Stinson constructed and studied an association scheme for ordered codes/arrays, thereby paving the way for applying the Delsarte theory in this case. In this work we derive several upper bounds on ordered codes relying upon several methods ranging from classical to newer ones. Some of the bounds, particularly those derived by linear programming, apply to orthogonal arrays and therefore, to TMS nets. (Received August 27, 2006)