

UNIVERSITY OF DELAWARE
DEPARTMENT OF MATHEMATICAL SCIENCES
DISCRETE MATHEMATICS SEMINAR

Friday Oct. 10, 2003, 4:00pm, Room 436 Ewing Hall

Planar and semiplanar functions

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We start with an incidence structure introduced by Dembowski and Ostrom in 1968 and used in conjunction with planar functions to construct affine planes. Motivated by a simple proof showing planar functions do not exist over even ordered groups, another class of functions is introduced. We show how these functions can be used to construct semiplanes by deleting a class of parallel lines from the incidence structure of Dembowski and Ostrom. Using only elementary techniques, we can determine a surprising amount about these structures.