

**Meeting:** 1003, Atlanta, Georgia, SS 24A, AMS Special Session on Design Theory and Graph Theory, I

1003-05-754            **Curt Lindner\*** ([lindncc@mail.auburn.edu](mailto:lindncc@mail.auburn.edu)), Mathematics Department, Auburn University,  
Auburn, AL 36849. *Perfect dextagon triple systems.*

A dextagon triple is a configuration consisting of 6 triangles whose “inside” edges form a copy of  $K_4$ . A dextagon triple system is a pair  $(X, D)$ , where  $D$  is a collection of edge disjoint dextagon triples which partitions the edge set of  $3K_n$  (= each pair of vertices is joined by 3 edges). If the inside copies of  $K_4$  form a block design ( $\lambda = 1$ ), the dextagon triple system is said to be perfect. We show that a necessary and sufficient condition for the existence of a perfect dextagon triple system of order  $n$  is  $n \equiv 1 \pmod{12}$ . (Received September 29, 2004)