JOHN VAN REES, Dept. of Computer Science, University of Manitoba The Relationship between (16,6,3)-BIBDs and (25,12) Binary Self-Orthogonal Codes

The $(6\lambda-2,2\lambda,\lambda)$ -designs are a family where for most of the family their existence is not known. Each incidence matrix for members of this family can be used to generate a binary self-orthogonal code. If there are no such codes "containing" the (v,k,λ) design, then there are no such designs. This was how the (22,8,4)-design was shown to be non-existent. Now the next two members of the family do exist but only one non-isomorphic design per parameter is known. Before extensive programming is attempted to find all non-isomorphic designs with these two parameter sets, it would be wise to see the relationship between the previous design in the family; i.e., (16,6,3) and the related (12,25) binary self-orthogonal code. This we do.