Symmetric (144,66,30)-designs with Frobenius group of order 78 as full automorphism group

Mario–Osvin Pavčević, Zagreb, Croatia

Keywords: symmetric design, Frobenius group, orbit structure, indexing
AMS Subject classification: 05B05

Abstract: In this paper we construct two nonisomorphic selfdual symmetric designs with parameters (144,66,30) on which the Frobenius group of order 78 is operating so that the cyclic group of order 6 has exactly 12 fixed points and blocks. We show that these two designs are the only ones admitting this kind of operation of $Frob_{78}$. Further, this group is the full automorphism group of them.