

On f -pyramidal Steiner triple systems

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A design is called f -pyramidal when it has an automorphism group fixing f points and acting sharply transitively on the others. We consider the problem of determining the set of values of v for which there exists an f -pyramidal Steiner triple system of order v . Although this problem has been deeply investigated when $f = 1$, it remains open for a special class of values of v . For the next admissible value of f , which is $f = 3$, we provide a complete solution. However, for greater values of f this problem remains widely open. In this talk, we will present the most recent results on this subject.

Keywords: Steiner triple system, f -pyramidal (sharply transitive) automorphism group.