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Geometries and their automorphisms

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Abstact

In some instances, incidence geometry can be used to solve group theoretical problems. The goal of this talk is to discuss one such instance, namely a partial classification result on abelian Tits sets. Moufang sets were introduced by Jacques Tits over 30 years ago, classifying them is still far out of reach. However, by generalizing the concept to that of Tits sets, and restricting us to examples that are not Moufang, we can use incidence-geometric methods to tackle the problem. The main part of the talk will be introductory: we will discuss some nice geometries and look at some of their automorphisms (hence the title). The geometries we'll look at are examples of abelian Tits sets, which will lead us to the definition of a Tits set, and the classfication result.