

ALGEBRAS WITH INVOLUTION AND CLASSICAL GROUPS

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The aim of this talk is to stress the deep links existing between the study of linear algebraic groups and the theory of central simple algebras endowed with an involution. We will then consider some consequences of this link. The theory of linear algebraic groups provides the proper level of generality to clarify the relationship between various results on central simple algebras and quadratic forms. On the other hand, the language of algebras with involution, more explicit and straightforward, can be successfully applied in order to investigate some “mysterious” properties of algebraic groups; namely the rationality problem can be treated in this way and cohomological invariants of high degree can be written explicitly.