

ALGEBRA
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More examples of non-rational adjoint groups

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Abstract: A k -variety is said to be rational if its function field is purely transcendental over k . The first example of a non-rational adjoint k -group $\mathrm{PSO}(q)$ was given by Merkurjev as a consequence of his computations of R -equivalence classes of adjoint classical groups. The quadratic form in question has non-trivial discriminant which property is used crucially in the proof. Gille provided the first example of a quadratic form of trivial discriminant whose associated adjoint group is non-rational. In this talk we give a recursive construction to produce examples of k_n -quadratic forms q_n in the n -th power of the fundamental ideal in the Witt ring whose corresponding adjoint groups $\mathrm{PSO}(q_n)$ are not (stably) rational.

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