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Real Galois cohomology of semisimple groups

Abstract:

In a 2-page note of 1969, Victor Kac described automorphisms of finite order of simple Lie algebras over the field of complex numbers C. He used certain diagrams that were later called Kac diagrams. In this talk, based on a joint work with Dmitry Timashev, I will explain the method of Kac diagrams for calculating the Galois cohomology set \( H^1(R, G) \) for a connected semisimple algebraic group \( G \) over the field of real numbers \( R \). I will use real forms of groups of type \( E_7 \) as examples. No prior knowledge of Galois cohomology, Kac diagrams, or groups of type \( E_7 \) will be assumed.