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 $\mathbb{C}$. 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 $H^1(\mathbb{R},G)$ for a connected semisimple algebraic group $G$ over the field of real numbers $\mathbb{R}$. 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.