On splitting of the normalizer of a maximal torus in groups of Lie type.

Alexey Galt

The problem of splitting of the normalizer of a maximal torus was stated by J. Tits in 1966. Let $\overline{G}$ be a simple connected linear algebraic group over the algebraic closure $\overline{\mathbb{F}}_p$ of a finite field of positive characteristic p. Let σ be a Steinberg endomorphism and $\overline{T}$ a maximal σ-invariant torus of $\overline{G}$. It's well known that all maximal tori are conjugated in $\overline{G}$ and the quotient group $N_{\overline{G}}(\overline{T})/\overline{T}$ is isomorphic to the Weyl group W of $\overline{G}$. The following natural problem arises: to describe the groups $\overline{G}$ in which $N_{\overline{G}}(\overline{T})$ splits over $\overline{T}$. A similar question can be stated for finite groups of Lie type. In this talk we will discuss the solutions of these problems.