On central simple quotients of Hopf algebras.

Ehud Meir

Abstract. Let k be a field. We ask what k-central simple algebras can we get as quotients of Hopf algebras. We call the corresponding subgroup of $Br(k)$ the Hopf-Schur group of k.This generalizes the question originally asked by Schur, about what central simple k-algebras are quotients of group algebras (the so called Schur algebras) and the Schur subgroup of $Br(k)$. Since group algebras are Hopf algebras, every Schur algebra is a Hopf Schur algebra.The Schur subgroup might be a very small subgroup of $Br(k)$, and we ask what other Hopf Schur algebras can we find. In this talk I will explain why actually every k-central simple algebra is a Hopf Schur algebra up to Brauer equivalence. We shall do so by giving a representation theoretic definition of Hopf algebras, and by considering forms of Hopf algebras. All the relevant notions will be explained.