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**Daniel R Krashen\*** ([dkrashen@math.uga.edu](mailto:dkrashen@math.uga.edu)), Department of Mathematics, University of Georgia, Athens, GA 30606. *Topology, arithmetic, and the structure of algebraic groups.*

Linear algebraic groups are the source of a number of important constructions in a variety of areas, including geometry, number theory and topology. The structure of these groups is intimately related to such structures as central simple algebras, algebras with involution, quadratic forms and hermitian forms. It is not surprising perhaps, that the study of such structures can involve a beautiful and subtle interplay between techniques from a variety of different areas of mathematics.

In this talk, I will focus on the study of central simple algebras. After relating these objects to linear algebraic groups, I will describe some questions of current interest, and try to explain the ways in which techniques from homotopy theory, arithmetic and algebraic geometry have been brought to bear on them. (Received December 04, 2012)