
JULIA HARTMANN, RWTH Aachen University, Templergraben 55, 52062 Aachen, Germany

A local global principle for algebraic group actions and applications

Patching techniques originally used in inverse Galois theory are based on factorization theorems for invertible matrices. This talk generalizes these factorization results from GL_n to rational linear algebraic groups. As a consequence, one obtains a local global principle for homogeneous spaces under such groups. One application is a new proof of the recent result of Parimala and Suresh on the maximal dimension of anisotropic quadratic forms over p -adic function fields (u -invariant). The same approach yields results on the period-index problem for central simple algebras.