1077-20-218 **Igor A. Rapinchuk***, Yale University, Department of Mathematics, 10 Hillhouse Avenue, New Haven, CT 06511. *On the conjecture of Borel and Tits for abstract homomorphisms of algebraic groups.*

The conjecture of Borel-Tits (1973) states that if G and G' are algebraic groups defined over infinite fields k and k', respectively, with G semisimple and simply connected, then given any abstract representation $\rho\colon G(k) \to G'(k')$ with Zariski-dense image, there exists a commutative finite-dimensional k'-algebra B and a ring homomorphism $f\colon k \to B$ such that ρ can essentially be written as a composition $\sigma \circ F$, where $F\colon G(k) \to G(B)$ is the homomorphism induced by f and $\sigma\colon G(B) \to G'(k')$ is a morphism of algebraic groups. We prove this conjecture in the case that G is either a universal Chevalley group of rank ≥ 2 or the group $\mathbf{SL}_{n,D}$, where D is a finite-dimensional central division algebra over a field of characteristic 0 and $n \geq 3$, and k' is an algebraically closed field of characteristic 0. In fact, we show, more generally that if R is a commutative ring and G is a universal Chevalley-Demazure group scheme of rank ≥ 2, then abstract representations over algebraically closed field of characteristic 0 of the elementary subgroup $E(R) \subset G(R)$ have the expected description. We also give applications to deformations of representations of $E(R)$. (Received August 14, 2011)