1037-20-92   **Qëndrim Gashi*** (`qendrim@math.uchicago.edu`), The University of Chicago, Department of Mathematics, 5734 S. University Ave., Room 208 C, Chicago, IL 60637. *A Conjecture of Kottwitz and Rapoport for Split Groups.*

Kottwitz and Rapoprt formulated a combinatorial conjecture involving root systems which implies a converse to Mazur's inequality. It is well-known that the latter implies the non-emptiness of certain affine Deligne-Lusztig varieties.

We prove the Kottwitz-Rapoport conjecture for all split groups —previously this was only known for (split) classical groups.

These results also imply the vanishing of higher cohomology groups for certain line bundles on toric varieties associated with root systems.

We also mention that the last part of the proof of our main result is related to the notion of minuscule Weyl group elements and the Mozes' game of numbers. (Received January 24, 2008)