In this talk, I would first like to discuss local canonical height functions (i.e. Green functions) for affine space regular automorphisms defined over a non-archimedean valued field. Then I would like to consider regular automorphisms defined over a number field: If $f : \mathbb{A}^N \to \mathbb{A}^N$ is a regular automorphism defined over a number field $K$, then the sum of local canonical height functions over all places of $K$ gives rise to a global canonical height function, with which we can derive several arithmetic properties of $f$. If possible, I would like to talk some finiteness results about commuting regular automorphisms. (Received September 19, 2009)