We study actions of semisimple Hopf algebras $H$ on filtered deformations $B$ of commutative domains such as algebras of differential operators on a smooth affine irreducible variety, universal enveloping algebras of a finite dimensional Lie algebra, symplectic reflection algebras, and quantized quiver varieties. We show that the action of $H$ on $B$ must factor through a group algebra, or in other words, if $H$ acts inner faithfully on $B$, then $H$ is cocommutative. The techniques used include reduction modulo $p$ and the study of semisimple cosemisimple Hopf actions on division algebras.

(The title, authors, and abstract of the talk are subject to change.) (Received January 16, 2015)