

1162-16-37

Daniel Rogalski, Robert Won and James Zhang* (zhang@math.washington.edu),
Department Of Mathematics, Box 354350, Seattle, WA 98195-0001. *Residue complexes and the
Brown-Goodearl conjecture.*

Brown and Goodearl conjectured that every noetherian Hopf algebra is Artin-Schelter Gorenstein. This conjecture is known to be true for many cases, in particular, for affine polynomial identity Hopf algebras. Weak Hopf algebras are an important generalization of Hopf algebras, and the category of modules over a weak Hopf algebra has a monoidal structure. Let W be a weak Hopf algebra that is a finitely generated module over its affine center. We prove that W has finite self-injective dimension and is a direct sum of Artin-Schelter Gorenstein algebras. Therefore Brown-Goodearl conjecture holds in this special weak Hopf setting. The main tool for the proof is the residue complex introduced by Yekutieli. We will also give some motivations and consequences of Brown-Goodearl conjecture. (Received August 17, 2020)