

1078-16-302

Christopher Ryan Nowlin*, cnowlin@math.ucsb.edu. *Torus-invariant prime spectra of Cauchon-Goodearl-Letzter extensions*. Preliminary report.

Fix a field k and q a generic scalar in k . Cauchon-Goodearl-Letzter (CGL) extensions are iteratively constructed skew polynomial algebras subject to hypotheses which allow Cauchon's theory of derivation-deleting homomorphisms to apply, as well as the stratification theory of Goodearl and Letzter. For the latter, we consider a CGL extension A and a suitably chosen algebraic torus acting rationally on A by automorphisms; the set of prime ideals of A invariant under the induced action of H forms a finite partially ordered set. In the case where A is a De Concini-Kac-Procesi algebra corresponding to an element w of a Weyl group W , an important theorem of Yakimov's guarantees that the torus-invariant prime spectrum of A will be isomorphic as a poset to the Bruhat order interval $[1, w]$ in W .

We will examine an iterative procedure for constructing isomorphisms between Bruhat order intervals and torus-invariant prime spectra, and see applications to understanding the prime spectra of CGL extensions not realizable as De Concini-Kac-Procesi algebras. (Received December 12, 2011)