

Algebra/Topology Seminar

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ON INVARIANT IDEALS OF REPRESENTATION RINGS OF SEMISIMPLE GROUPS

Thursday, April 13, 2017
3:00 p.m. in ES-143

ABSTRACT. The talk is based on my joint work with Sanghoon Baek and Kirill Zainoulline; see [arXiv:1612.07278].

To any semisimple group G , one can associate its weight lattice Λ , the set of simple weights $\varpi_1, \dots, \varpi_n$, and the Weyl group W acting on Λ . One can consider the Laurent polynomial ring $\mathbb{Z}[\Lambda]$ (the monomial corresponding to $\lambda \in \Lambda$ will be denoted by e^λ) and the *augmented orbit polynomials* $p_i = -|W\varpi_i| + \sum_{\lambda \in W\varpi_i} e^\lambda$. These polynomials generate an ideal $I \subset \mathbb{Z}[\Lambda]$.

One can also consider the character lattice of the maximal torus of G : $T^* \subseteq \Lambda$ and the corresponding Laurent polynomial subring $\mathbb{Z}[T^*] \subseteq \mathbb{Z}[\Lambda]$.

If certain conditions on T^* and Λ are satisfied, I will explain how one can find the intersection $I \cap \mathbb{Z}[T^*]$.