



THE WORLDWIDE CENTER OF MATHEMATICS

Molien Series and a Recent Theorem of Kostant



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Coffee, tea, cookies: 3:30pm
Talk: 4-5pm

929 Massachusetts Ave., Cambridge, Suite #102

Abstract: In a 2007 paper entitled "On the Centralizer of K in $U(\mathfrak{g})$ ", Bertram Kostant gave an algorithm for computing the generators of the centralizer of a maximal compact group K in the enveloping algebra of a complex semisimple Lie algebra $U(\mathfrak{g})$. His motivation is to rescue an old program that sought to determine an irreducible Harish-Chandra module H of $U(\mathfrak{g})$ via the finite-dimensional action of the above centralizer on a primary k -component in H . "This original approach of Harish-Chandra to a determination of all H has largely been abandoned because one knows very little about generators of that centralizer". However, Kostant's approach produces an algorithm of very high time and space complexity. We present a different algorithm of a lower complexity and compute some previously unknown examples. This is joint work with Steven Jackson.

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