Representation and Number Theory Seminar

Maximality properties of generalised Springer representations of $SO(N, \mathbb{C})$

by

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Abstract

Let C be a unipotent class of G and E an irreducible G-equivariant local system on C. The generalised Springer correspondence attaches to (C, E) an irreducible representation ρ of some Weyl group. We call C the support of ρ. It is well-known that ρ appears in the top cohomology of a certain variety. Let $\bar{\rho}$ be the representation obtained by summing the cohomology groups of this variety. Waldspurger proved a 'maximality' result for certain generalised Springer representations of $Sp(2n, \mathbb{C})$. We will discuss and sketch the proof of an analogous result for $SO(N, \mathbb{C})$, which states: if C is parametrised by an orthogonal partition consisting of only odd parts, then $\bar{\rho}$ has a unique irreducible subrepresentation $\rho^{\max}$ whose support is maximal among the supports of the irreducible subrepresentations of $\rho^{\max}$. We will also present an algorithm to compute $\rho^{\max}$. In particular, we focus on computing an example.

Date	:	13 December 2022 (Tuesday)
Time	:	4:00pm –5:00pm (Hong Kong SAR)
Zoom link	:	
		https://cuhk.zoom.us/j/97838822137?pwd=ZTVvSC9abmNjR3RCcS9FTzJNTVhXdz09
Meeting ID	:	978 3882 2137
Passcode	:	sesame

All are Welcome