
THE WEIZMANN INSTITUTE OF SCIENCE
FACULTY OF MATHEMATICS AND COMPUTER SCIENCE
Algebraic Geometry and Representation Theory Seminar

Room 155 ,Ziskind Building
on Wednesday, Nov 10, 2021 at 17:00

starting Nov 10, the seminar will meet once in two weeks, at 17:00 Israel time
Yakov Varshavsky Hebrew U of Jerusalem

Affine Springer fibers and depth zero L-packets.

Abstract:

Let G be a connected reductive group over $F = F_q((t))$, splitting over a maximal unramified extension. To every tamely ramified Langlands parameter λ in general position gives rise to a finite set Π_{λ} of irreducible admissible representations of $G(F)$, called the L-packet.

The goal of this talk is to provide a geometric description of characters χ_{π} of all $\pi \in \Pi_{\lambda}$ in terms of homology of affine Springer fibers. As an application, we give a geometric proof of the stability of $\sum \chi^{\text{st}}_{\lambda} := \sum_{\pi \in \Pi_{\lambda}} \chi_{\pi}$.

Furthermore, we show that the $\chi^{\text{st}}_{\lambda}$'s are compatible with inner twistings.

This is a joint work with Roman Bezrukavnikov (<https://arxiv.org/abs/2104.13123>), and is a first step in a joint outgoing project of the two of us with David Kazhdan, whose goal is to obtain similar results for general depth zero representations.