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

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[HTTPS://WEIZMANN.ZOOM.US/J/98304397425](https://weizmann.zoom.us/j/98304397425)

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A local trace formula for the local Gan-Gross-Prasad conjecture for special orthogonal groups

Abstract:

The local Gan-Gross-Prasad conjecture studies the restriction and branching problems for representations of classical and metaplectic groups. In this talk, I will talk about my proof for the tempered part of the local Gan-Gross-Prasad conjecture (multiplicity one in Vogan packets) for special orthogonal groups over any local fields of characteristic zero, which combines the work of Waldspurger (for the tempered part of the conjecture for special orthogonal groups over p -adic fields) and Beuzart-Plessis (for the tempered part of the conjecture for unitary groups over real field) in a non-trivial way. In the proof, an indispensable result which is also of independent interest is a formula expressing the regular nilpotent germs of quasi-split reductive Lie algebras over any local fields of characteristic zero via endoscopic invariants, which was previously proved by Shelstad over p -adic fields. We also relate the formula with the Kostant's sections. [HTTPS://WEIZMANN.ZOOM.US/J/98304397425](https://weizmann.zoom.us/j/98304397425)