



# ODTU-Bilkent Algebraic Geometry

## The Langlands – Kottwitz method for $GSpin$ Shimura varieties and eigenvarieties

By

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**Abstract:** A Given a connected reductive algebraic group  $G$  over a number field  $F$ , the global Langlands (reciprocity) conjecture roughly predicts that, there should be a correspondence between (automorphic side) the isomorphism classes of (cuspidal, cohomological) automorphic representations of  $G$  and (Galois side) the isomorphism classes of (irreducible, locally de-Rham) Galois representations for  $\text{Gal}(\bar{F} / F)$  taking values in the Langlands dual group of  $G$ .

In the first part of this talk, I will sketch the main argument of our expected theorem/proof for (automorphic to Galois) direction of this conjecture, for  $G = GSpin(n,2)$ ,  $n$  odd and  $F$  to be totally real, under 3 technical assumptions (for time being), namely we assume that automorphic representations are additionally “non-CM” and “non-endoscopic” and “std-regular”.

In the second part, mainly following works of Loeffler and Chenevier on overconvergent  $p$ -adic automorphic forms, I will present an idea to remove the std-regular assumption on the theorem via the theory of eigenvarieties.

**Date:** 15 March 2024, Friday

**Time:** 15:40 (GMT+3)

**Place:** Zoom

To request the event link, please send a message to [sertoz@bilkent.edu.tr](mailto:sertoz@bilkent.edu.tr)