

THETA CORRESPONDENCE AND IT'S CONNECTION TO (RELATIVE) LANGLANDS PROGRAM

Speaker: Jialiang Zou
University of Michigan

Time: Thu, Dec 13th, 09:00 - 10:00

Venue: Room 110, SCMS

Abstract:

The theta correspondence examines the branching of the Weil representation of a symplectic group (or its double cover) to a product of two reductive subgroups. This talk explores two results connecting theta lifts to the (relative) Langlands program, focusing on global and finite field settings.

Globally, theta correspondence lifts automorphic representations between these two groups. It is expected that, in certain cases, theta correspondence realizes Langlands functoriality. Based on this principle, Rui Chen and I extended Arthur's multiplicity formula to new cases for even orthogonal and unitary groups by propagating the AMF for symplectic and quasi-split unitary groups via theta correspondence.

The second part of the talk focuses on theta correspondence over finite fields. I will present a Hecke algebraic approach to studying theta correspondence in this case, based on joint work with Jiajun Ma and Congling Qiu. Finally, I will speculate on connections between these results and the relative Langlands duality proposed by Ben-Zvi, Sakellaridis, and Venkatesh, drawing from ongoing work with Jiajun Ma, Congling Qiu, and Zhiwei Yun.