



## THE WEIZMANN INSTITUTE OF SCIENCE

FACULTY OF MATHEMATICS AND COMPUTER SCIENCE

Algebraic Geometry and Representation Theory Seminar

on Wednesday, Nov 04, 2020  
at 16:30

<https://weizmann.zoom.us/j/98304397425>

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### Double descent for classical groups

Abstract:

We consider the generalized doubling integrals of Cai, Friedberg, Ginzburg and Kaplan. These generalize the doubling method of Piatetski-Shapiro and Rallis and represent the standard L-function for pairs of irreducible, automorphic, cuspidal representations  $\pi$  - on a (split) classical group  $G$ , and  $\tau$  - on  $GL(n)$ . The representation  $\pi$  need not have any particular model (such as a Whittaker model, or a Bessel model). These integrals suggest an explicit descent map (an inverse to Langlands functorial lift) from  $GL(n)$  to  $G$  (appropriate  $G$ ). I will show that a certain Fourier coefficient applied to a residual Eisenstein series, induced from a Speh representation, corresponding to a self-dual  $\tau$ , is equal to the direct sum of irreducible cuspidal representations  $\sigma \otimes \sigma'$ , on  $G \times G$ , where  $\sigma$  runs over all irreducible cuspidal representations, which lift to  $\tau$  ( $\sigma'$  is the complex conjugate of an outer conjugation of  $\sigma$ ). This is a joint work with David Ginzburg.  
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