



THE WEIZMANN INSTITUTE OF SCIENCE
FACULTY OF MATHEMATICS AND COMPUTER SCIENCE

Algebraic Geometry and Representation Theory Seminar

on Wednesday, Aug 12, 2020
at 16:30

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

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On automorphic descent from $GL(7)$ to G_2

Abstract:

In this talk, I will introduce the functorial descent from cuspidal automorphic representations π of $GL_7(\mathbb{A})$ with $L^S(s, \pi, \wedge^3)$ having a pole at $s=1$ to the split exceptional group $G_2(\mathbb{A})$, using Fourier coefficients associated to two nilpotent orbits of E_7 . We show that one descent module is generic, and under mild assumptions on the unramified components of π , it is cuspidal and having π as a weak functorial lift of each irreducible summand. However, we show that the other descent module supports not only the non-degenerate Whittaker integral on $G_2(\mathbb{A})$, but also every degenerate Whittaker integral. Thus it is generic, but not cuspidal. This is a new phenomenon, compared to the theory of functorial descent for classical and GS_{pin} groups. This work is joint with Joseph Hundley.

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