



THE WEIZMANN INSTITUTE OF SCIENCE  
FACULTY OF MATHEMATICS AND COMPUTER SCIENCE

Algebraic Geometry and Representation Theory Seminar

Room 261 ,Ziskind Building  
on Wednesday, May 27, 2015  
at 11:00

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A Family of New-way Integrals for the Standard L-function of Cuspidal  
Representations of the Exceptional Group of Type  $G_2$ .

Abstract:

In a joint work with N. Gurevich we have constructed a family of Rankin-Selberg integrals representing the standard twisted L-function of a cuspidal representation of the exceptional group of type  $G_2$ . This integral representations use a degenerate Eisenstein series on the family of quasi-split forms of  $Spin_8$  associated to an induction from a character on the Heisenberg parabolic subgroup. This integral representations are unusual in the sense that they unfold with a non-unique model. A priori this integral is not factorizable but using remarkable machinery proposed by I. Piatetski-Shapiro and S. Rallis we prove that in fact the integral does factor. As the local generating function of the local L-factor was unknown to us, we used the theory of  $C^*$ -algebras in order to approximate it and perform the unramified computation. If time permits, I will discuss the poles of the relevant Eisenstein series and some applications to the theory of CAP representations of  $G_2$ .