L-function of cuspidal representations of G_2 and their poles

Abstract:

In this talk I will describe a family of integral representations for the standard twisted L-function of a cuspidal representation of the exceptional group of type G_2. These integral representations unfold with a non-unique model. A priori, this integral is not Eulerian. However, using remarkable machinery proposed by I. Piatetski-Shapiro and S. Rallis, we prove that in fact the integral does factor. In the course of the plocal unramified calculation, we use another non-standard method, approximations of generating functions. I will then describe a few applications of these integral representations to the study of the analytic behaviour of the this L-function and to various functorial lifts associated with the group G_2.