Integrability of p-adic matrix coefficients

Abstract:

Many works in relative p-adic harmonic analysis aim to describe which representations of a reductive group \( G \) can be embedded inside the space of smooth functions on a homogeneous space \( G/H \). A related question is whether such an embedding can be realized in a canonical form such as an \( H \)-integral over a matrix coefficient. In a joint work with Omer Offen we treated the symmetric case, i.e., when \( H \) is the fixed point group of an involution. As part of the answer we provide a precise criterion for such integrability, which reduces in the group case to Casselman’s known square-integrability criterion.