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Sign changes in harmonic analysis on p -adic groups

Reeder has described a conjectural candidate for the partition of certain supercuspidal representations constructed by Yu (the so called toral, unramified supercuspidals) into L-packets, and verified that it satisfies most of the necessary properties. However, the problem of stability of the appropriate character sums remained outstanding. In this talk, I will discuss joint work with DeBacker that shows the necessary stability. A key ingredient is the study of a sign associated to combinatorial data involving Galois orbits on a root system, which we compute unconditionally in the unramified case.