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Fine structure in the K -theory of reductive p -adic groups

Let G be a reductive p -adic group. Examples are $GL(n, Q_p)$, $SL(n, Q_p)$, etc., where Q_p is the field of p -adic numbers. Since Q_p is a locally compact topological field, these groups are locally compact. If G is any reductive p -adic group, V. Lafforgue has proved that the BC (Baum–Connes) conjecture is valid for G . However, there is a fine structure in the K -theory of $C^*_r(G)$ which BC does not seem to explicitly calculate. This talk will explain what this fine structure is and will then state a conjecture as to how this fine structure can be explicitly calculated. This fine structure conjecture then leads to the ABP (Aubert–Baum–Plymen) conjecture in the representation theory of reductive p -adic groups.