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The ZL-amenability constant of a finite group

A. Azimifard, E. Samei and N. Spronk (JFA, 2009) studied the following question: *for which compact groups G is $ZL^1(G)$, the centre of the group algebra, amenable?* In the case where G is finite, they showed that the amenability constant of $ZL^1(G)$, which we denote by $AM_Z(G)$, is equal to 1 if and only if G is abelian. Moreover, if G is a finite non-abelian group, they used a result of D. A. Rider (TAMS, 1973) on norms of central idempotents to show that $AM_Z(G) \geq 301/300$.

In this talk, after reviewing these results, I will give an outline of some recent work which obtains much better lower bounds on $AM_Z(G)$ without using Rider's result. The tools used to do this are: some basic character theory, guided by known structure theorems for the class of *just-non-abelian* finite groups; and a simpler exact formula for $AM_Z(G)$ for groups which have *two character degrees*. This last formula is taken from a joint paper with M. Alaghmandan and E. Samei (CMB, to appear).