

# L2-BETTI NUMBERS FOR REPRESENTATION CATEGORIES

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Abstract: Popa, Shlyakhtenko and Vaes recently introduced a cohomology theory and L2-Betti numbers for rigid  $C^*$ -tensor categories, generalizing the familiar notions for discrete groups. Other than discrete groups, categories of representations of compact quantum groups also fit into this framework. In the special setting of Kac-type compact quantum groups, it turns out that the L2-Betti numbers thus obtained agree with the existing notion introduced by Kyed in 2008. This rather surprising result was obtained in joint work with Stefaan Vaes, David Kyed and Sven Raum. Using similar techniques, we were also able to compute L2-Betti numbers in quite a few concrete examples for which they were previously unknown.