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C-rigidity of two-step nilpotent groups*

(Joint work with Sven Raum) We examine the following classic question—Does a group ring remember its generating group?—from a C*-algebraic perspective. A group G is called C*-superrigid if $C_r^*(G) \cong C_r^*(H)$ implies $G \cong H$ for any other group H . It has long been known that torsion free abelian groups are C*-superrigid because such a group G is recovered as the quotient of the unitary group of $C^*(G)$ by the connected component of the identity. Beyond abelian groups very little was known about C*-superrigid groups. The “next” natural class of groups to consider are the nilpotent ones. In this talk I will discuss a recent result with S. Raum that shows finitely generated two-step nilpotent groups are C*-superrigid.