ANALYSIS SEMINAR

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Approximate identities in approximate amenability

by

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ABSTRACT

The concept of amenability for Banach algebras was introduced by Barry E. Johnson in 1972, and since then has shown to be of enormous importance, not only in the theory of Banach algebras but also in the theory of C*- algebras and abstract harmonic analysis. The definition of amenability (for Banach algebras) is for most part algebraic, whereas in analysis one can approximate. In the year 2000, Richard J. Loy (Australian National University) and I introduced several concepts of approximate amenability for Banach algebras. Since then a good deal of theory has been developed on these notions - by us and by our collaborators. However, the question of existence of approximate identities in approximately amenable Banach algebras has not been completely resolved. In this talk, after surveying some basic results in the theory of approximate amenability, I will demonstrate that under certain additional conditions on the algebra, approximately amenable Banach algebras possess bounded approximate identities, but in general this may fail to be true. Our work in particular shows that some of the notions of approximate amenability that have different formal definition are in fact genuinely different.

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Monday, February 13, 2012 at 3:00-4:00 pm

Davidson Lecture Hall, Claremont McKenna College

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