The Oliver Club

www.math.cornell.edu/~oliver/

Concentration of Measure, Ramsey Theory, Geometric Tomography, and Dynamics of L_0

A topological group is called extremely amenable *if all its continuous actions on compact spaces have fixed points. Surprisingly, many well-studied non-locally compact groups turned out to be extremely amenable, for example, the unitary group of the infinite dimensional separable Hilbert space (Gromov-Milman) or the group of order preserving permutations of the rationals (Pestov). Historically the first groups to be proved extremely amenable (Christensen, Herer, Glasner, Furstenberg and Weiss) were derived from carefully chosen submeasures together with certain locally compact groups.*

It turns out that deciding precisely whether extreme amenability holds for groups of this type (depending on the submeasure and on the locally compact group) involves the mathematical phenomena mentioned in the title. I will describe in what way these phenomena determine extreme amenability, and in what way proving extreme amenability helps discover new such phenomena. One by-product of these investigations is an answer to a question of Furstenberg and Pestov asking if a tight connection exists between extreme amenability and the Lévy property for an appropriate class of groups.

Slawomir Solecki

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Refreshments will be served at 3:55 PM in the Mathematics Department lounge (532 Malott Hall).

Thursday, November 15, 2007
at 4:25 PM in 406 Malott Hall