

1096-46-2011      **Ben R Hayes\*** (brh6@ucla.edu). *Extended von Neumann dimension for sofic groups and equivalence relations.*

We discuss how to extend the usual definition of von Neumann dimension for groups and measure-preserving equivalence relations to arbitrary Banach space representations of groups and equivalence relations, provided they are sofic. This goes by exploiting the analogy between the left regular representation of a group, and Bernoulli actions of this group, and employing methods in sofic entropy due to Lewis Bowen, David Kerr and Hanfeng Li. We discuss applications to Banach space representations of groups including partially answering a question due to Gromov, and potential applications to the study of measurable equivalence relations. (Received September 17, 2013)