

Meeting: 999, Nashville, Tennessee, POPA, Invited Address

999-46-3 **Sorin T. Popa*** (popa@math.ucla.edu), Math Department, University of California Los Angeles,
Los Angeles, CA 90095-1555. *Deformation, rigidity and classification results for II_1 factors.*

We will explain a new strategy for studying type II_1 von Neumann factors, which has proved extremely successful in recent years. It consists in using deformation and rigidity properties of the algebra, whenever some weak versions of both these properties are met. This technique allows us to obtain strong rigidity results for the group measure space factors associated with actions by Bernoulli shifts of weakly rigid groups G (i.e. groups that have infinite normal subgroups with the relative property (T)). Various invariants, such as the fundamental group and the outer automorphism group of the factor, which were intractable up to now, can be explicitly calculated. Classification results can be obtained for special classes of factors. (Received June 30, 2004)