1023-03-407   **Matthew D. Foreman*** (`Mforeman@math.uci.edu`), University of California Irvine,
Mathematics Department, Irvine, CA. *Classifying Measure Preserving Transformations.*

Many dynamical systems carry a time-invariant probability measure. These measures describe the statistical information of the system qualitatively. For example they can be "completely random" (Bernoulli) or "completely ordered" (0-entropy). Classifying the possible ergodic probability measures that arise this way is a problem dating back to the 1950's and before, involving work of Halmos, von Neumann, Ornstein, Furstenberg, Zimmer and others.

The classification problem can be put into the context of Polish Group actions, where it turns out to have very high complexity even in very concrete cases. (Received September 20, 2006)