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Svetlana Katok* (katok_s@math.psu.edu), Department of Mathematics, The Pennsylvania State University, 218 McAllister Building, University Park, PA 16802. *Rigidity of measurable structure for algebraic actions of higher-rank abelian groups.*

In a joint work with A. Katok and K. Schmidt we show that for a certain class of \mathbb{Z}^k actions ($k > 1$) by ergodic toral automorphisms, measure-theoretic conjugacy implies algebraic conjugacy. In a sharp contrast with the rank one case, using the above criteria and certain facts from algebraic number theory, we produce examples of \mathbb{Z}^k actions by hyperbolic toral automorphisms (which are Bernoulli maps) with the same entropy data which are weakly isomorphic (i.e. each is metrically isomorphic with respect to the Lebesgue measure to a factor of the other) with finite fibers but not isomorphic. Related results include examples of non-isomorphic actions by Bernoulli automorphisms with the same entropy data, both weakly isomorphic and not, which can be distinguished by the structure of their centralizers. (Received September 29, 1999)