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# Ergodicity and type of nonsingular Bernoulli actions

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I present a joint work with Michael Björklund and Zemer Kosloff on nonsingular Bernoulli actions. These are the translation actions of a discrete group $G$ on the product space $\{0,1\}^G$ equipped with the product of the probability measures $\mu_g$ on $\{0,1\}$. We prove in almost complete generality that such an action is either dissipative or weakly mixing, and we determine its Krieger type. In particular, we prove that the group of integers does not admit a Bernoulli action of type $\mathrm{II}_\infty$. We prove that a group $G$ admits a Bernoulli action of type $\mathrm{III}_1$ if and only if $G$ has nonzero first $L^2$-cohomology. We also prove that type $\mathrm{III}_\lambda$ only arises when $G$ has more than one end.

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