# An almost mixing of all orders property of algebraic dynamical systems

Arenas-Carmona, L.

Berend, D.

Bergelson, V.

© 2017 Cambridge University Press. We consider dynamical systems, consisting of-actions by continuous automorphisms on shift-invariant subgroups of, where is the field of order. These systems provide natural generalizations of Ledrappier's system, which was the first example of a 2-mixing-action that is not 3-mixing. Extending the results from our previous work on Ledrappier's example, we show that, under quite mild conditions (namely, 2-mixing and that the subgroup defining the system is a principal Markov subgroup), these systems are almost strongly mixing of every order in the following sense: for each order, one just needs to avoid certain effectively computable logarithmically small sets of times at which there is a substantial deviation from mixing of this order.