An important problem in ergodic theory that still remains open was formulated by V. A. Rokhlin [Izvestiya Akad. Nauk SSSR. Ser. Mat. 13 (1949), 329–340; MR0030709]. The problem asks if mixing implies mixing of all orders, for transformations or flows. The answer is known to be affirmative in special cases, such as for finite rank systems, for example. The authors in the paper under review prove that under some conditions on the rotation vector, for a full set of Lebesgue measure, Arnol'd flows are mixing of all orders, and for a set of full Hausdorff dimension, Kochergin flows are mixing of all orders. Their proof uses an extension of Ratner’s property, which was used to study horocycle flows, and as they say could prove useful in other applications.

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References

Note: This list reflects references listed in the original paper as accurately as possible with no attempt to correct errors.

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