Summary: “We consider reparametrizations of Heisenberg nilflows. We show that if a Heisenberg nilflow is uniquely ergodic, all non-trivial time-changes within a dense subspace of smooth time-changes are mixing. Equivalently, in the language of special flows, we consider special flows over linear skew-shift extensions of irrational rotations of the circle. Without assuming any Diophantine condition on the frequency, we define a dense class of smooth roof functions for which the corresponding special flows are mixing whenever the roof function is not a coboundary. Mixing is produced by a mechanism known as stretching of ergodic sums. The complement of the set of mixing time-changes (or, equivalently, of mixing roof functions) has countable codimension and can be explicitly described in terms of the invariant distributions for the nilflow (or, equivalently, for the skew-shift), producing concrete examples of mixing time-changes.”

References

29. B. Marcus. *Ergodic properties of horocycle flows on surfaces of negative curvature,*


