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Jianyu Chen* (jychen@math.msu.edu), C236 Wells Hall, Department of Mathematics, Michigan State University, East Lansing, MI 48823, and **Huyi Hu**. *Exponential mixing of torus extension over expanding maps.*

We study the mixing property for the skew product $F : T^d \times T^l \rightarrow T^d \times T^l$ given by $(x, y) \rightarrow (Tx, y + \tau(x))$, where $T : T^d \rightarrow T^d$ is a C^∞ uniformly expanding endomorphism, and the fiber map $\tau : T^d \rightarrow T^l$ is a C^∞ map. We apply the semiclassical approach to show the dichotomy: either F mixes exponentially fast or τ is an essential coboundary. This is a joint work with Huyi Hu. (Received January 20, 2015)