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Exponential mixing for skew products with a holder roof function

Consider the skew product $F(x, y) = (f(x), y + \tau(x))$ on $S^1 \times S^1$, where $f \in C^{1+}$, as the base map, is (piecewise) expanding. When τ , as the roof function, has C^{1+} regularity (and not locally constant) it is known that F mixes exponentially. However, in applications of this problem one is usually faced with g being only Holder continuous with exponent strictly less than one. I will discuss the exponential mixing of F in this more general situation.