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Chinmaya Gupta* (chinmaya.gupta@usc.edu), 3620 South Vermont Ave., KAP 108, Los Angeles, CA 90089, and **Matthew Nicol** and **William Ott**. *Dynamical Borel-Cantelli lemmas for some nonuniformly hyperbolic dynamical systems.*

In classical probability theory, the Borel-Cantelli lemmas state that if $A_n \in \mathcal{B}$ is a sequence of independent subsets of a set X , and (X, \mathcal{B}, μ) is a probability space, then $\sum_{n=0}^{\infty} \mu(A_n) = \infty$ implies that $\mu \{x \in X : x \in A_n \text{ infinitely often}\} = 1$. In the context of dynamical systems, if $T : X \rightarrow X$ is a map preserving the measure μ , we may ask under what conditions $\mu \{x \in X : T^n(x) \in A_n \text{ infinitely often}\} = 1$ when $\sum_{n=0}^{\infty} \mu(A_n) = \infty$.

In this talk, we will establish various versions of the Borel-Cantelli property for appropriate sequences of sets A_n for nonuniformly hyperbolic dynamical systems (X, \mathcal{B}, μ, T) . (Received September 12, 2010)