Mark Piraino* (mark.piraino@northwestern.edu). The weak Bernoulli property for matrix Gibbs states.

We study the ergodic properties of a class of measures on $\Sigma^\mathbb{Z}$ for which $\mu_{\mathcal{A},t}[x_0 \cdots x_{n-1}] \approx e^{-nP} \|A_{x_n} \cdots A_{x_0}\|^t$, where $\mathcal{A} = (A_0, \ldots, A_{M-1})$ is a collection of matrices. The measure $\mu_{\mathcal{A},t}$ is called a matrix Gibbs state. In particular we give a sufficient condition for a matrix Gibbs state to have the weak Bernoulli property. We employ a number of techniques to understand these measures including a novel approach based on Perron-Frobenius theory. We find that when $t$ is an even integer the ergodic properties of $\mu_{\mathcal{A},t}$ are readily deduced from finite dimensional Perron-Frobenius theory. We then consider an extension of this method to $t > 0$ using operators on an infinite dimensional space. Finally we use a general result of Bradley to prove the main theorem. (Received September 09, 2019)