1154-37-642 **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 $\mu_{\mathcal{A},t}[x_0 \cdots x_{n-1}] \approx e^{-nP} \left\| A_{x_0} \cdots A_{x_{n-1}} \right\|^t$, where $\mathcal{A} = (A_0, \dots, A_{M-1})$ 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)