1135-03-642 **Aaron W Anderson*** (awanders@caltech.edu) and **Martino Lupini**. *The Fraïssé Limit of Finite Dimensional Matrix Algebras with the Rank Metric.*

We show that a certain ring, $M(\mathbb{F}_q)$, constructed by von Neumann and realized as the coordinatization of a continuous geometry, can also be realized as the metric Fraïssé limit of the class of finite-dimensional matrix algebras over a finite field $\mathbb{F}_q$, equipped with the rank metric. Von Neumann constructed $M(\mathbb{F}_q)$ as the completion of the direct limit of an inductive sequence of matrix rings, and showed that the resulting ring does not depend on the choice of sequence. We provide an alternate proof of the latter by the uniqueness of the Fraïssé limit. We show that the automorphism group of this metric structure is extremely amenable, implying (by the metric Kechris-Pestov-Todorcevic correspondence) an approximate Ramsey Property. We also provide an explicit bound for the approximate Ramsey Property. Both the extreme amenability result and the Ramsey Property bound rely on work by Carderi and Thom, who proved that $M(\mathbb{F}_q)$'s unit group is extremely amenable. (Received September 11, 2017)