1161-05-136 **Gweneth McKinley*** (gmckinley@ucsd.edu), **Asaf Ferber** and **Kyle Luh**. *Resilience of the rank of random matrices.*

For an $n \times m$ matrix M of independent Rademacher (± 1) random variables, it is well known that if $n \leq m$, then M is of full rank with high probability. We show that this property is resilient to adversarial changes to M. More precisely, if $m \geq n + n^{1-\varepsilon/6}$, then even after changing the sign of $(1-\varepsilon)m/2$ entries, M is still of full rank with high probability. Note that this is asymptotically best possible as one can easily make any two rows proportional with at most $m/2$ changes. Moreover, this theorem gives an asymptotic solution to a slightly weakened version of a conjecture made by Van Vu in 2008. (Received August 14, 2020)