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Alexander D Smith* (adsmith@math.harvard.edu). *2^k -Selmer groups and Goldfeld's conjecture.*

Take E to be an elliptic curve over a number field whose four torsion obeys certain technical conditions. In this talk, we will outline a proof that 100% of the quadratic twists of E have rank at most one. To do this, we will find the distribution of 2^k -Selmer ranks in this family for every $k > 1$. Using this framework, we will also find the distribution of the 2^k -class ranks of the imaginary quadratic fields for all $k > 1$. (Received September 16, 2019)