

# Rank Distribution of 130 Million Elliptic Curves

William Stein

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This is a graph of the distribution of the ranks of the more than 130 million elliptic curves in the Stein-Watkin database. These are all curves with  $|\Delta| \leq 10^{12}$  and  $c_4 \leq 1.44 \cdot 10^{12}$  and  $N < 10^8$ . The top graph is rank 1, the second graph from the top is rank 0, the third graph is rank 2, and the fourth is rank  $\geq 3$ . Notice that there are a surprisingly large number of elliptic curves of rank 2 in this data. (Acknowledgement: Baur Bektemiroy)

