David Harvey*, School of Mathematics and Statistics, University of New South Wales, Sydney, NSW 2052, Australia. Faster deterministic integer factorization.

The best known deterministic complexity bound for computing the prime factorization of an integer $n$ is $O(M(n^{1/4}\log n))$, where $M(k)$ denotes the cost of multiplying $k$-bit integers. This result is due to Bostan–Gaudry–Schost, following the Pollard–Strassen approach. We show that this bound can be improved by a factor of $\sqrt{\log\log n}$. This is joint work with Edgar Costa (New York University). (Received September 13, 2011)