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**Yitang Zhang\***, University of New Hampshire. *Small gaps between primes: A new method.*

The proof of the existence of infinitely many pairs of primes whose gaps are bounded by a constant relies on the GPY sieve and a stronger version of the Bombieri-Vinogradov theorem. We introduce a new method which may be used to improve the existing results. The underlying idea is somewhat analogous to the circle method. We also discuss potential applications of this method to other problems, such as the existence of Goldbach numbers in short intervals. (Received September 17, 2013)