A further proof of the twin primes conjecture

Diego Liberati
Consiglio Nazionale delle Ricerche

With the exception of 3-5, every twin pair is centered on multiples of 6, like 5-7, 11-13 and so on, but not all multiples of 6 are the center of a twin pair: this is because some of then are sieved by primes higher than 2 and 3.

In fact, every other prime p does sieve such a pair, either at the immediate left or at the immediate right of the multiple of 6, twice every p pairs, thus not sieving p-2 pairs every p pairs.

Then, in order to compute how many pairs are not sieved by any of such infinite primes, one need to compute the product of the fraction p-2/p over all the primes p greater than 3.

When the number of primes tends to the infinity, both the numerator and the denominator of such product tend to the infinity with the same strength (even if the fraction tends to zero, quite slowly indeed, because p-2/p tends to increase toward 1 when p increases).

Thus the numerator proves that there are infinitely many pairs of twin primes not sieved by any lower prime, then proving the conjecture.