Anatomy of Integers
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On the consecutive spacing distribution of normal numbers

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Abstract

Questions on the spacings between elements of arithmetic sequences, such as primes, quadratic residues, values of binary quadratic forms, and Riemann Zeta zeros, are of great interest. If one believes the Hardy–Littlewood prime k-tuple conjectures, then one finds, as first shown by Gallagher, that the spacing between consecutive primes is Poisson distributed. Thus one believes that the occurence of primes is similar to the passing of cars on a road. We consider a similar problem, studying the consecutive spacing between integers which have very nearly the number of prime factors that integers usually have. We prove that this is Poisson.