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On the tower factorization of integers

I will report on recent (and fun!) joint work with Jean-Marie De Koninck on the factorization of integers into towers of primes. Writing an integer n as a product of prime powers p^a, then factoring each exponent a as a product of prime powers q^b, and so on, we obtain the *tower factorization* of n. We then study the *height* of an integer, namely the number of "floors" in its tower factorization. In particular, given a fixed integer $k \geq 1$, we will see a formula for the density of the set of integers with height k.