# ON THE RANDOM CHARACTER OF FUNDAMENTAL CONSTANT EXPANSIONS

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ABSTRACT. We propose a theory to explain random behavior for the digits in the expansions of fundamental mathematical constants. At the core of our approach is a general hypothesis concerning the distribution of the iterates generated by dynamical maps. On this main hypothesis, one obtains proofs of base-2 normality—namely bit randomness in a specific technical sense—for a collection of celebrated constants, including $\pi$, $\log 2$, $\zeta(3)$, and others. Also on the hypothesis, the number $\zeta(5)$ is either rational or normal to base 2. We indicate a research connection between our dynamical model and the theory of pseudorandom number generators.