

Ergodic Methods for Continued Fractions

The study of the statistical properties of continued fractions was initiated by C. F. Gauss . Building on subsequent of R. O. Kuzmin, A. Khinchin and W. Doeblin, C Ryll-Nardzewski showed that this theory could be based on Birkhoff's pointwise ergodic theorem. This has evolved into a substantial field called the metric theory of algorithms, covered by 11K in Mathematics Reviews. In this talk I will describe this subject and a portion of its modern development. Topics cover include, The Euclidean Algorithm, The Gauss Map, The invariant measure, ergodicity and mixing, Birkhoff's pointwise ergodic theory, subsequence ergodic theory, the natural extension map, Hurwitz constants.