

Some problems of extreme statistics of random walks and random operators

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I will discuss several extreme statistics problems in which unusual (but apparently related) regularities arise: a) statistics of two-dimensional "stretched" random paths over a semicircle, b) statistics of one-dimensional random walks in a Poisson trap field, and c) spectral properties of random operators. We will discuss how number-theoretic regularities arise in problems b) and c), and what is the relation of these problems to modular geometry, the Riemann raindrop function, and the limiting properties of Eisenstein series.