

Péter Kevei (University of Szeged): On the tail of the solution of random fixed point equations

Abstract: In this talk we review some results on the tail behavior of the solution X of the perpetuity equation $X = AX + B$, where (A, B) and X on the right-hand side are independent, and the equality holds in distribution. The distribution of such an X is the stationary distribution of the stochastic recurrence equation $X_{n+1} = A_{n+1}X_n + B_{n+1}$, where (A_n, B_n) is an iid sequence. When the distribution of $\log A$ is nonarithmetic we provide sufficient conditions for the regular variation of the tail of X . We also treat the arithmetic case, which turns out to be surprisingly different.