BOUNDARY CROSSING DISTRIBUTIONS OF RANDOM WALKS RELATED TO THE LAW OF THE ITERATED LOGARITHM

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Abstract
In [8] a result for the first passage densities of Brownian motion as \( t \to \infty \) was given for boundaries, which grow faster than \( \sqrt{t} \) as \( t \to \infty \). From this result the Kolmogorov–Petrovski–Erdős test near infinity has been derived. Here we extend these results to first passage probabilities of random walks. The asymptotic formulas are the same as for Brownian motion, especially no overshoot term shows up.