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A GRAIN OF DUST FALLING THROUGH A SIERPINSKI GASKET

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摘要

关键词 [Binomial random variables](#) [fractals](#) [Hausdorff dimension](#) [random walks](#) [self-similarity](#)

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Abstract In this paper we analyze the downward random motion of a particle in a vertical, bounded, Sierpinski gasket SG , where at each layer either absorption or delays are considered. In the case of motion with absorption the explicit distribution of the position of the descending particle in the pre-gasket SG_n is obtained and the limiting case of the Sierpinski gasket discussed. For the delayed downward motion we derive a representation of the random time needed to arrive at the base of SG_n in terms of independent binomial random variables (containing the contribution of delays at different layers with different geometrical structures).

Key words [Binomial random variables](#) [fractals](#) [Hausdorff dimension](#) [random walks](#) [self-similarity](#)

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