A drunkard's walk on the real line

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Abstract:

The basic idea of Statistical Model Checking is to repeatedly simulate the behavior of a real-world system in order to say something about the probability that some performance property is satisfied. When the system model is huge, a single simulation run can take hours. Accordingly, it is vital to be able to terminate as soon as possible. We show how currently used techniques can be compared to a random walk on the real line. We then discuss the shortcomings of these methods and how these can be alleviated.