

The height achieved by random walk prior to a given drawdown

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ABSTRACT

For a random walk whose (light-tailed) increments have positive mean, lower and upper bounds are provided for the expected maximal value until it experiences a given drawdown d . This study also complements the Lundberg exponential stochastic upper bound and the Cramer-Lundberg approximation for the expected minimum of the random walk, with an exponential stochastic lower bound. Our treatment of the problem involves Skorokhod embeddings of random walks in Martingales, especially via the Az{\ema-Yor and Dubins' stopping times, adapted from standard Brownian Motion to exponential Martingales.