# The martingale approach for the occurrence of words in i.i.d. trials

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**Resumo**

Consider a sequence of i.i.d. trials where each trial produces a letter from a finite alphabet. Given a collection of words, we look at this sequence till the moment t at which one of these patterns appears as a run. For example, if our alphabet is the set $\{H, T\}$ and we consider the word $HTH$ then we get $\tau = 5$ in the realization $THHTH$. We show how the martingale approach introduced by Li can be employed to compute the mean and the generating function of $\tau$ and the probability that a pattern is the first one to appear.