

Detecting linear sequences and subsequences[†]

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Abstract

Greenwood (1946), using an L_2 distance, and others have addressed the question of detecting a too-linear fit of the occurrence times $T_0 < T_1 < \dots < T_n$ of a sequence of random events. Two convenient distances are introduced here, then applied to the more challenging problem of detecting too-linear subsequences, where the multiple subsequence effect must be taken into account. Two interpretations of “linear subsequence” are considered.

MSC: primary 62M02; secondary 62E15

Keywords: Poisson process; Exponential distribution; Arrival times; Linear subsequence; Gap-linear subsequence; Order statistics; Dirichlet distribution; Product of beta random variables

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