On occurrence of subpattern and method of gambling teams

Vladimir Pozdnyakov

Received: 15 September 2005 / Revised: 23 March 2006 / Published online: 21 September 2006 © The Institute of Statistical Mathematics, Tokyo 2006

Abstract The expected value and generating function of the number of overlapping occurrences of a pattern P in a Markov chain until the first occurrence of a member from a finite collection of patterns that start with P is obtained. A martingale technique is employed to address the problem.

Keywords Pattern \cdot Gambling teams \cdot Waiting times \cdot Markov chains \cdot Martingales \cdot Test of randomness