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Stochastic Models in Systems Analysis

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From some time past our interest was focused to find new possibilities for characterizing the process of generation of the words by generative systems. In our previous papers Orman[8] and Orman[9] we have introduced some numerical functions able to characterize classes of derivations according to a given generative system up to an equivalence. They are referred to as derivational functions. In this paper, firstly we consider equivalence classes of derivations and we establish a property of symmetry. Secondly, we shall refer to some problems concerning the reliable systems. Many and very important results have been obtained especially by A.D. Solovyev and B.V. Gnedenko. In this sense we refer to some aspects regarding to the problem of the increase of the effectiveness of stand-by systems as a way in which the stochastic-approximation techniques can be applied in practice.

Keywords: random variables, Markov chains, transition matrices, stochastic differential equations, stochastic approximation procedures.

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