

Lynch, James; Sethuraman, Jayaram

Large deviations for processes with independent increments. (English) Zbl 0624.60045
Ann. Probab. 15, 610-627 (1987).

The large deviation principle (LDP) is studied for probability measures induced by stochastic processes with stationary and independent increments which have no Gaussian component. It is assumed that the moment generating function of the increments exists and thus the sample paths of such stochastic processes lie in the space of functions of bounded variation.

The LDP for such processes is obtained under the weak*-topology. This covers a case which was ruled out in *S. R. S. Varadhan*, *Commun. Pure Appl. Math.* 19, 261-286 (1966; [Zbl 0147.155](#)). As applications, the LDP for the Poisson, Gamma and Dirichlet processes are obtained. The notions of weak LDP and large deviation tightness are shown to be useful.

Reviewer: [B.Kryżiené](#)

MSC:

[60F10](#) Large deviations
[60G10](#) Stationary stochastic processes
[60J99](#) Markov processes

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Keywords:

[stationary and independent increments](#); [moment generating function](#); [Dirichlet processes](#); [large deviation tightness](#)

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