

AUTOREGRESSIVE LAPLACE FUNCTIONALS ON STOCHASTIC
PROCESSES

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Abstract: The paper deals with non-negative stochastic processes $X(t, \omega)$ ($t \geq 0$) with stationary and independent increments, continuous on the right sample functions, non-degenerate to 0, and fulfilling the initial condition $X(0, \omega) = 0$. The main aim is to study the probability distribution ν_t of the random Laplace functional $\int_0^\infty \exp(-tX(\tau, \omega))d\tau$ for $t > 0$. In particular, a necessary and sufficient condition in terms of corresponding representing measures for ν_t , to be multiplicatively autoregressive is established.

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