

Filtering and parameter estimation for a jump stochastic process with discrete observations

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Abstract

A compound Poisson process is considered. We estimate the current position of the stochastic process based on past discrete-time observations (non-linear discrete filtering problem) in Bayesian setting. We obtain bounds for the asymptotic rate of the expected square error of the filter when observations become frequent. The bounds depend linearly on jump intensity. Also, estimation of process' parameters is addressed.

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