

ASYMPTOTIC BEHAVIOR OF M -ESTIMATOR AND RELATED RANDOM FIELD FOR DIFFUSION PROCESS

NAKAHIRO YOSHIDA*

*Department of Applied Mathematics, Faculty of Engineering Science, Osaka University,
Toyonaka, Osaka 560, Japan*

(Received September 6, 1988; revised June 30, 1989)

Abstract. The M -estimate which maximizes a positive stochastic process Q is treated for multidimensional diffusion models. The convergence in distribution of the process of ratio of Q 's after normalizing is proved. The asymptotic behavior of M -estimates is stated. We present the asymptotic variance in general cases and in estimation by misspecified models.

Key words and phrases: Diffusion process, M -estimator.