

ON THE ROBUST ESTIMATION IN POISSON PROCESSES WITH PERIODIC INTENSITIES

NAKAHIRO YOSHIDA^{1*} AND TOSHIHARU HAYASHI²

¹*Department of Applied Mathematics, Faculty of Engineering Science, Osaka University, Toyonaka,
Osaka 560, Japan*

²*Department of Mathematics and Related Fields, College of Integrated Arts and Sciences,
University of Osaka Prefecture, Sakai, Osaka 591, Japan*

(Received January 17, 1989)

Abstract. Under some regularity conditions, it is well known that the maximum likelihood estimator (MLE) is asymptotically normal and efficient. However, if the observation is contaminated, the MLE is not always an appropriate estimator. In this paper, we treat M -estimators and study their asymptotic behavior. By choosing estimation equations, robust M -estimators are presented for phase parameters.

Key words and phrases: Efficiency, M -estimator, minimax robust, Poisson process, robustness.