ASYMPTOTIC BOUNDS FOR ESTIMATORS WITHOUT LIMIT DISTRIBUTION

J. PFANZAGL

Mathematical Institute, University of Cologne, Weyertal 86-90, 50931 Cologne, Germany

Abstract. Let $\mathfrak{P}$ be a general family of probability measures, $\kappa : \mathfrak{P} \to \mathbb{R}$ a functional, and $N_{(0,\sigma^2(P))}$ the optimal limit distribution for regular estimator sequences of κ. On intervals symmetric about 0, the concentration of this optimal limit distribution can be surpassed by the asymptotic concentration of an arbitrary estimator sequence only for P in a "small" subset of $\mathfrak{P}$. For asymptotically median unbiased estimator sequences the same is true for arbitrary intervals containing 0. The emphasis of the paper is on "pointwise" conditions for $P \in \mathfrak{P}$, as opposed to conditions on shrinking neighbourhoods, and on "general" rather than parametric families.

Key words and phrases: Estimation, asymptotic theory, local uniformity, nonparametric theory, minimax bounds.