van der Vaart, Aad
On differentiable functionals. (English) Zbl 0732.62035

Author’s abstract: Given a sample of size n from a distribution $P_\lambda$, one wants to estimate a functional $\psi(\lambda)$ of the (typically infinite-dimensional) parameter $\lambda$. Lower bounds on the performance of estimators can be based on the concept of a differentiable functional $P_\lambda \rightarrow \psi(\lambda)$. We relate a suitable definition of differentiable functional to differentiability of $\lambda \rightarrow dP_\lambda^{1/2}$ and $\lambda \rightarrow \psi(\lambda)$. Moreover, we show that regular estimability of a functional implies its differentiability.

Reviewer: P.Gänßler (München)

MSC:
62G07 Density estimation
62G20 Asymptotic properties of nonparametric inference

Keywords:
convolution theorem; asymptotic efficiency; semi-parametric model; information operator; efficient information; mixture model; censoring; truncation; Lower bounds; differentiable functional; regular estimability; differentiability

Full Text: DOI