1. Punctual estimation

introduction

Neyman & Fisher's factorization theorem

Let:

- $(\Omega, \mathcal{A}, \mathcal{P})$ k-D statistical model parametrized by Θ
- $L : \Omega \times \Theta \to \mathbb{R}$ likelihood function of $(\Omega, \mathcal{A}, \mathcal{P})$
- (M, Σ) measurable space
- $X : \Omega \to M$ random variable
- $T : M \to \mathbb{R}^k$ statistic

Then, holds:

- T sufficient $\leftrightarrow$ $\exists\, \Lambda : \mathbb{R}^m \times \Theta \to \mathbb{R}^+, h : \Omega \to \mathbb{R}^k$ „ :

  $\forall\, x \in \Omega$:

  $\forall\, \theta \in \Theta$:

  $$L(x, \theta) = \Lambda(T(x), \theta) h(x)$$