1. Statistic models

introduction

Characterization of regular exponential models

Let:

· $(\Omega, \mathcal{A}, \mathcal{P})$ 1-D exponential model parametrized by Θ

· $\exp(f(x)\phi(\theta) + f'(x) + \phi'(\theta))$ likelihood function of $(\Omega, \mathcal{A}, \mathcal{P})$ statistical model

Then, holds:

· Θ interval , $\phi, \phi' \in \mathcal{C}^2$

· $\forall\ \theta \in \Theta$:

$\phi'(\theta) \neq 0$

$E_\theta f^2(x) \in \mathbb{R}$

· $\rightarrow (\Omega, \mathcal{A}, \mathcal{P})$ regular

Demonstration:

no demonstration