$$\diamondplus$$

Density Maximum Likelihood

1   Why

We provide a principle for density selection based on maximizing the probability of the dataset.

2   Definition

Let $(x^1, \ldots, x^n)$ be a dataset in $\mathbf{R}^d$.

The *principle of maximum likelihood* says to solve:

$$\textbf{find} \quad f \text{ a density}$$

$$\textbf{to maximize} \quad \prod_{k=1}^{n} f(x^k)$$

We call a solution of the above problem a *maximum likelihood density*. We call the objective of the above problem *density likelihood*.

N-Dimensional Space

Space

2

Simple Functions

Partitions   Characteristic Functions