Mohammad-Djafari, Ali
Bayesian or Laplacian inference, entropy and information theory and information geometry
in data and signal processing. (English) [Zbl 1483.62011]
Mohammad-Djafari, Ali (ed.) et al., Bayesian inference and maximum entropy methods in science and

Summary: The main object of this tutorial article is first to review the main inference tools using Bayesian
approach, Entropy, Information theory and their corresponding geometries. This review is focused mainly
on the ways these tools have been used in data, signal and image processing. After a short introduction
of the different quantities related to the Bayes rule, the entropy and the Maximum Entropy Principle
(MEP), relative entropy and the Kullback-Leibler divergence, Fisher information, we will study their use
in different fields of data and signal processing such as: entropy in source separation, Fisher information
in model order selection, different Maximum Entropy based methods in time series spectral estimation
and finally, general linear inverse problems.

For the entire collection see [Zbl 1470.00021].

MSC:

62B11 Information geometry (statistical aspects)
62F15 Bayesian inference
94A17 Measures of information, entropy

Full Text: DOI