



Some information inequalities for statistical inference

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Abstract

In this paper, we first describe the generalized notion of Cramer–Rao lower bound obtained by Naudts (J Inequal Pure Appl Math 5(4), Article 102, 2004) using two families of probability density functions: the original model and an escort model. We reinterpret the results in Naudts (2004) from a statistical point of view and obtain some interesting examples in which this bound is attained. Further, we obtain information inequalities which generalize the classical Bhattacharyya bounds in both regular and non-regular cases.

Keywords Information inequality · Generalized Cramer–Rao bound · Escort probability distribution · Generalized Bhattacharyya bounds · Deformed exponential family

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