INFORMATION GEOMETRY AND STATISTICAL INFERENCE

DÉNES PETZ

ALRÉD RÉNYI INSTITUTE OF MATHEMATICS HUNGARIAN ACADEMY OF SCIENCES, POB 127,
H-1364 BUDAPEST, HUNGARY
E-mail address: `petz@renyi.hu`

Variance and Fisher information are ingredients of the Cramér-Rao inequality. Fisher information is regarded as a Riemannian metric on a quantum statistical manifold and choose monotonicity under coarse graining as the fundamental property of variance and Fisher information. In this approach there is a kind of dual one-to-one correspondance between the candidates of the two concepts. It is emphased that Fisher informations are obtained from relative entropies as contrast functions on the state space and argue that the scalar curvature might be interpreted as an uncertainty density on a statistical manifold.

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