A COMMENT ON A REGULARITY CONDITION IN A CURVED EXPONENTIAL FAMILY

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Received February 2, 2014; revised March 28, 2014

Abstract. Based on a curved exponential family, there is a regularity condition that the score function with random variables is the linear independence, which is commonly used in the information geometry. An equivalence relation to the regularity condition is that the Fisher information is positive definite under the curved exponential family. We investigate a key condition for two regularity conditions and we recognize it as the linear independence for the first derivative of natural parameter with respect to the parameter.