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Quantum Estimation

Majid Hassani

Sharif University of Technology

Abstract

Estimation of an unknown parameter is a challenging problem in the field of quantum metrology. For this reason, several methods were presented and also tested in experiments. In this talk, I will review the basic ideas of classical estimation theory, like Fisher information and Cramer-Rao bound. Then I will generalize these concepts to the quantum world. I will also discuss two alternate methods for doing quantum estimation, specially the new method stated in the following reference.

D. Burgarth, V. Giovannetti, A. Kato, K. Yuasa, New J. Phys. 17, 113055 (2015)