

Review of: "On Optimal Linear Prediction"

Soumitro Auddy¹

¹ Salesforce (United States), San Francisco, United States

Potential competing interests: No potential competing interests to declare.

This paper does a good job of providing a mathematical foundation for tying concepts of quantum mechanics with statistical mathematics. The two statistician concept, using a Bayesian statistician and a more rigid statistician as two ways of approaching a statistical problem, is a novel approach to tackling this class of problems.

Suggestions:

- The mathematical formulae do not have explanations and are ambiguous to a reader with less knowledge about quantum theory.
- From a readability and structuring point of view, Definitions 1, 2, and 3 should have been added before Theorems 1 and 2. This is because the section picks up where Theorem 2 leaves off, right after Definition 3 is completed.
- Section 3 appears to make a hard pivot towards statistics, without making the bridge between sections 2 and 3 clear.
- The mathematical analysis in Theorems 6 and 8 needs more explanation and, as currently written, is largely inaccessible to readers with less knowledge about quantum mechanics.
- Overall, the paper has merit in terms of presenting mathematical foundations of the relation of quantum mechanics with statistics. However, the lack of practical applications makes it a highly niche read.