

Review Form 1.6

Journal Name:	Journal of Advances in Mathematics and Computer Science
Manuscript Number:	Ms_JAMCS_78984
Title of the Manuscript:	Probability density functions for prediction
Type of the Article	Original Research Article

General guideline for Peer Review process:

This journal's peer review policy states that **NO** manuscript should be rejected only on the basis of '**lack of Novelty**', provided the manuscript is scientifically robust and technically sound. To know the complete guideline for Peer Review process, reviewers are requested to visit this link:

(<https://www.journaljamcs.com/index.php/JAMCS/editorial-policy>)

PART 1: Review Comments

	Reviewer's comment	Author's comment (if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)
<u>Compulsory</u> REVISION comments	<p>1. The title of the manuscript is “Probability density functions for prediction”, bur the problem of prediction is nod defined in mathematical terms. It is not clear what means “in light of future data” in mathematical sense.</p> <p>2. “First, numerical simulations were conducted to confirm that the third variance maximizes the log-likelihood in light of future data”. However, prediction is performed by mathematical expectation!</p> <p>3. The problem of the probability density function recalculation for prediction has solved in the framework of Bayesian approach.</p> <p>Mukha V. S., Kako N. F. Integrals and integral transformations connected with vector Gaussian distribution // Vestsi Natsyianal'nai akademii navuk Belarusi. Seryia fizika-matematychnykh navuk=Proceedings of the National Academy of Sciences of Belarus. Physics and Mathematics series, 2019, vol. 55, no. 4, pp. 457–466. https://doi.org/10.29235/1561-2430-2019-55-4-457-466</p> <p>Mukha V.S., Kako N.F. Total probability formula for vector Gaussian distributions // Doklady BGUIR. 2021; 19(2): 58–64. https://doi.org/10.35596/1729-7648-2021-19-2-58-64</p> <p>Mukha V. S., Kako N. F. The integrals and integral transformations connected with the joint vector Gaussian distribution // Vestsi Natsyianal'nai akademii navuk Belarusi. Seryia fizika-matematychnykh navuk =Proceedings of the National Academy of Sciences of Belarus. Physics and Mathematics series, 2021, vol. 57, no. 2, pp. 206–216. https://doi.org/10.29235/1561-2430-2021-57-2-206-216</p>	<p>1. "The concepts of prediction and future data are based on that of expected log-likelihood; refer to Konishi2008 for more details." was added and Konishi2008 was added to the references. Moreover, "x_i" are other realizations given by the normal distribution with a mean of μ and variance of σ^2." was added.</p> <p>2. "It should be noted that the log-likelihood in the light of future data is averaged here to know the expected predictive ability of estimators." was added.</p> <p>3. Thank you very much for your referring to the references on Bayesian approach. There references are added to the paper. "The framework of Bayesian approach should be taken into account." was also added to the paper.</p>
<u>Minor</u> REVISION comments		
<u>Optional/General</u> comments		

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PART 2:

	Reviewer’s comment	Author’s comment <i>(if agreed with reviewer, correct the manuscript and highlight that part in the manuscript. It is mandatory that authors should write his/her feedback here)</i>
Are there ethical issues in this manuscript?	<i>(If yes, Kindly please write down the ethical issues here in details)</i>	