

Review Form 1.6

Journal Name:	Asian Journal of Research and Reviews in Physics
Manuscript Number:	Ms_AJR2P_92403
Title of the Manuscript:	A Theoretical Study on the Information Theoretic Inequalities and Fisher-Shannon Product of a Free Particle
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:

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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)
Compulsory REVISION comments	<p>In the present manuscript, authors aim at establishing the validity of the information theoretic inequalities in regard of a free particle in three dimensions. This may be published upon appropriate modifications, indicated below.</p> <ol style="list-style-type: none"> 1. Abstract should be precise, for example as: 'In this manuscript, we consider plane-wave solution for a free particle, and normalize the wave function in an arbitrarily large but finite cube. The probability densities in the momentum space are employed to compute the numerical values of the information theoretic quantities such as Shannon information entropy, Fisher information entropy, Shannon power and the Fisher-Shannon product, both in the coordinate and momentum spaces for different values of the length of the cubical box. Numerical values so found satisfy the Beckner, Bialynicki-Birula and Myceilski (<i>BBM</i>) inequality relation, Stam-Cramer-Rao inequalities (better known as the Fisher based uncertainty relation) and Fisher-Shannon product relation. This establishes the validity of the information theoretic inequalities in respect of the motion of a free particle.' 2. Replace 'trademark' by 'landmark' in line 6 of introduction. 3. In line 8, remove 'position-momentum' (since the statement is true for other uncertainty relations too). 4. 'both' appearing in line 18, should come earlier before 'Shannon'. 5. Remove the redundant last line of page 1, 'The two most important measures of the information theories are the Shannon entropy and Fisher information entropy'. 6. Remove the redundant line 'and S_T is the Shannon entropy sum' appearing after eqn. (1). 7. In section 2, it is sufficient to write the time independent Schrödinger equation (14) and the corresponding plane wave solution (25), since materials in the middle are taught at undergraduate level. 8. In section 3, line 4, remove 'In the following cases', since it is repeated. 9. Remove the next sentence and write: 'In view of equation (28), we obtain'. 10. Where the value of $L = 1$ is used? Rather, in the table L is varied. Use of $K = 2p$ has been mentioned twice. It should be mentioned at right place. 11. In the conclusion, author should give appropriate interpretation for the negative values of s_y. Further, $I_\rho I_\gamma \geq 36$, and $P_\rho P_\gamma \geq 1$, while authors obtain huge values, which are also required to be properly interpreted, in the conclusion. The first line of the conclusion should be replaced by stating that 'In the present article, we consider plane wave solution for a free particle in 3 dimension and find the wave function in the momentum space, using Fourier transformation. 12. Two different papers of reference (1) are not properly indicated. In reference (10) first author is 'Mukherjee N and Roy A K'. 	
Minor REVISION comments		
Optional/General comments		

PART 2:

	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)
Are there ethical issues in this manuscript?	<i>(If yes, Kindly please write down the ethical issues here in details)</i>	

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