SCIENCEDOMAIN *international*
www.sciencedomain.org

SDI Review Form 1.6

Journal Name:	**Physical Science International Journal**
Manuscript Number:	**2015_PSIJ_18414**
Title of the Manuscript:	**THE COMPUTATIONAL LIMIT TO QUANTUM DETERMINISM AND THE BLACK HOLE INFORMATION LOSS PARADOX**
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:

(http://www.sciencedomain.org/page.php?id=sdi-general-editorial-policy#Peer-Review-Guideline)

SDI Review Form 1.6

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	The paper follows the standard formalism of quantum mechanics where changes in state refer to changes in phase, say, relative to an observer. A true change of state entails change in energy as the system dissipates to its surroundings or vice versa. Therefore, quantum mechanics is not an adequate theory to describe, for instance, computation, which is always a dissipative process. The proper way to describe changes of state is the principle of least action in its original form by Maupertuis, equivalent to the 2nd law of thermodynamics (see e.g., Annila A. Physical portrayal of computational complexity. ISRN Computational Mathematics 2012 321372, 1–15. ArXiv/0906.1084). I think the readers ought to be informed about that quantum mechanics is a unitary theory, but computational processes do not conserve energy. The NP problems are hard because the computation itself alters the problem, i.e., boundary conditions. In other words, variables cannot separated to solve the equation of motion. Once this is made clear to the readers, they will understand the limitations of the adopted approach and hence are able to judge the obtained results accordingly. I encourage the Author to provide accurate account of reality.	I appreciate the endorsement of the Reviewer and the time the Reviewer spent thoroughly reading my paper. I value the Reviewer's suggestion to provide a comprehensive account of the nature of computation. Yet, I must decline this suggestion, at least in the paper under revision. Here are my reasons. I am familiar with the work of Arto Annila that considers computation (from an initial instance to the final acceptance) as a physical process. However, agnostic as I am with respect to the question whether computational complexity can be classified by the natural law of the maximal energy dispersal, in the present paper I direct my criticism at the claim that the complete information about the initial quantum state of a physical system would determine the system's quantum state at any other time. As I argue in the paper, assuming the strong exponential time hypothesis, SETH (**whatever the nature of its existence is – physical or mathematical**), even if the initial quantum state of an arbitrary system were precisely known, it might be impossible in the real world to predict the system's exact final quantum state.
Minor REVISION comments	Perhaps only a conversion problem, but numerous words are missing space in between.	All misprinting have been fixed in the revised version of the paper, please observe.
Optional/General comments		Again, thank you very much for your time and consideration.